```
                        405                      410                      415
Pro His Pro Ser Asn Glu Leu Arg Gly Leu Asn Glu Lys Met Ser Asn
                        420                      425                      430
Lys Cys Ser Met Leu Ser Thr Ala Glu Asp Asp Ile Arg Gln Asn Phe
                        435                      440                      445
Thr Gln Leu Pro Leu His Lys Asn Lys Gln Glu Cys Ile Leu Asp Ile
            450                      455                      460
Ser Glu His Thr Leu Ser Glu Asn Asp Leu Glu Glu Leu Arg Val Asp
465                      470                      475                      480
His Tyr Lys Cys Asn Ile Gln Ala Ser Val His Val Ser Asp Phe Ser
                        485                      490                      495
Thr Asp Asn Ser Gly Ser Gln Pro Lys Gln Lys Ser Asp Thr Val Leu
            500                      505                      510
Phe Pro Ala Lys Asp Leu Lys Glu Lys Asp Leu His Ser Ile Phe Thr
            515                      520                      525
His Asp Ser Gly Leu Ile Thr Ile Asn Ser Ser Gln Glu His Leu Thr
            530                      535                      540
Val Gln Ala Lys Ala Pro Phe His Thr Pro Pro Glu Glu Pro Asn Glu
545                      550                      555                      560
Cys Asp Phe Lys Asn Met Asp Ser Leu Pro Ser Gly Lys Ile His Arg
                        565                      570                      575
Lys Val Lys Ile Ile Leu Gly Arg Asn Arg Lys Glu Asn Leu Glu Pro
                        580                      585                      590
Asn Ala Glu Phe Asp Lys Arg Thr Glu Phe Ile Thr Gln Glu Glu Asn
                        595                      600                      605
Arg Ile Cys Ser Ser Pro Val Gln Ser Leu Leu Asp Leu Phe Gln Thr
            610                      615                      620
Ser Glu Glu Lys Ser Glu Phe Leu Gly Phe Thr Ser Tyr Thr Glu Lys
625                      630                      635                      640
Ser Gly Ile Cys Asn Val Leu Asp Ile Trp Glu Glu Glu Asn Ser Asp
                        645                      650                      655
Asn Leu Leu Thr Ala Phe Phe Ser Ser Pro Ser Thr Ser Thr Phe Thr
            660                      665                      670
Gly Phe
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<210> 4493
<211> 1829
<212> DNA
<213> Homo sapiens

<400> 4493
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120
gtactgctgt cttccaaggt agctctaagt tttgatgtgt gggcttctga gtttatattc
180
tgaaaggaaa tacacttctt ttgaacatcc ccactaggtt cttttccatt gtcaataagg
240
agcatcagcc agtgaatctg tttcaggttt ccattctgca gaactcctcc aaagcatgtg
300
ctagtggcaa gacagtggtt cttatgatgt tttcccttaa cttttccttg tatgttcttg
360
```

```
ggtggttcct aagggaaagg gaagcacatg atcatgggaa tgatagccca gaacaaaaag
420
aaatcttgtc ttaccacagt gttttatagg agagattggg agaaatcatc ctgttttctc
480
tgtgacctga tttcagaaga gactgatcca aaaattataa cggcagggaa cctagtgcat
540
ttggcactga gatttaaatg caaccagaat tgtcctcaag gcccagccat aaaagcattg
600
tctctctcga ccttctggta tcttgttaga gagcttttca ctgtgaggaa gtgtggaaaa
660
atagctctgt gtgtgtgtgt gtgtgtgtgt gtgtgtgtgt gtaatctgtt aggttgggga
720
taggttttct gctagccaat attaaaagag acctgcaata aaaaaattac cctgnatctg
780
atagaaagca agtgtttttg tatgtgtggg tgaatgtgtg ttcatgcccg tatatgtcta
840
cacacagatg acaaattata tttgaaatcg ttggaaaata aattcagatc aaaatgcctt
900
tcaggcccat tacctagaaa tctatcttaa aacctgggta tgttcctaag gtcatttctt
960
tgcttatgct aaattaatta caattatgaa tggaggatat tctactgtac ttttttaaaa
1020
agaaactatt tttgtgtttg aaagtgaaac caacatccag atctatagca gagtccttat
1080
tcttctcata aatctttta ctttggctac aaatagatga tggtatgatt ctattatata
1140
ttttatataa aatccatcca aattaagttt tgggtaagtg tgttgtttaa tctgaactat
1200
agtaacttaa tactctaaac aatagttcac tccatttggt cctttctcca cagatgtaat
1260
tatgttttca actcaggaac tatggcaagg aactttcccc agatcaaatt ctattaacgc
1320
tgagatacaa gtcatccatg cacagccact atcataccct ttattctcac tgaaaggcag
1380
aactcagaac ctgttatttt atgtctgtaa tcatgtactt tggcatcttt tggaggaaag
1440
gggcaggata actcactgga atgtacagta ttttgctagt gcatttcaag gaatggaatc
1500
ttctccagta tgaaattacc agatataaaa taatgtaatg atgctgagga tataagcttt
1560
tagaaggtaa tttgatggta tttctttctc gaatgaaaag ctgctggttt accctcaacc
1620
ctattcatta gcattaccat gagtgaattt atatctaatt atttccactt gccctgttct
1680
cttcacacca aggaagctcc agatccagta tcttgtttgg cctcaaaaca gaagcagctt
1740
cttttgtctc ccagcagtag tgagccactc agtctcttcc acaggaagtt tgggagccta
1800
cattccttga gtcagggagc ttaattaca
1829

    <210> 4494
    <211> 111
    <212> PRT
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<213> Homo sapiens

<400> 4494
Met Ile Met Gly Met Ile Ala Gln Asn Lys Lys Lys Ser Cys Leu Thr
1   5   10   15
Thr Val Phe Tyr Arg Arg Asp Trp Glu Lys Ser Ser Cys Phe Leu Cys
            20   25   30
Asp Leu Ile Ser Glu Glu Thr Asp Pro Lys Ile Ile Thr Ala Gly Asn
        35   40   45
Leu Val His Leu Ala Leu Arg Phe Lys Cys Asn Gln Asn Cys Pro Gln
    50   55   60
Gly Pro Ala Ile Lys Ala Leu Ser Leu Ser Thr Phe Trp Tyr Leu Val
65   70   75   80
Arg Glu Leu Phe Thr Val Arg Lys Cys Gly Lys Ile Ala Leu Cys Val
                85   90   95
Cys Val Cys Val Cys Val Cys Val Cys Asn Leu Leu Gly Trp Gly
                100   105   110

<210> 4495
<211> 3623
<212> DNA
<213> Homo sapiens

<400> 4495
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120
catgttctgc tgttaatggc tctggtggga aagacagcct gtgggttctc cctgatgtct
180
ttattggaaa gcctggaccc agactggacc cctgaccagt atgattacag ctacgaggat
240
tataatcagg aagagaacac cagtagcaca cttacccacg ctgagaatcc tgactggtac
300
tacactgagg accaagctga tccatgccag cccaacccct gtgaacacgg tggggactgc
360
ctcgtccatg ggagcacctt cacatgcagc tgcctggctc ctttctctgg gaataagtgt
420
cagaaagtgc aaaatacgtg caaggacaac ccatgtggcc ggggccaatg tctcattacc
480cctactaccg ctgtgtctgt aaacacccctt acacaggtcc cagctgctcc   540
caagtggttc ctgtatgcag gccaaacccc tgccagaatg gggctacctg ctccccggcat
600
aagcggagat ccaagttcac ctgtgcctgt cccgaccagt tcaaggggaa attctgtgaa
660
ataggttctg atgactgcta tgttggcgat ggctactctt accgagggaa aatgaatagg
720
acagtcaacc agcatgcgtg cctttactgg aactcccacc tcctcttgca ggagaattac
780
aacatgttta tggaggatgc tgaaacccat gggattgggg aacacaattt ctgcagaaac
840
ccagatgcgg acgaaaagcc ctggtgcttt attaaagtta ccaatgacaa ggtgaaatgg
900
gaatactgtg atgtctcagc ctgctcagcc caggacgttg cctacccaga ggaaagcccc
960

actgagccat caaccaagct tccggggttt gactcctgtg gaaagactga gatagcagag
1020
aggaagatca agagaatcta tggaggcttt aaaagcacgg cgggcaagca cccatggcag
1080
gcgtccctcc agtcctcgct gcctctgacc atctccatgc cccagggcca cttctgtggt
1140
ggggcactga tccacccctg ctgggtgctc actgctgccc actgcaccga cataaaaacc
1200
agacatctaa aggtggtgct aggggaccag gacctgaaga aagaagaatt tcatgagcag
1260
agctttaggg tggagaagat attcaagtac agccactaca atgaaagaga tgagattccc
1320
cacaatgata ttgcattgct caagttaaag ccagtggatg gtcactgtgc tctagaatcc
1380
aaatacgtga agactgtgtg cttgcctgat gggtcctttc cctctgggag tgagtgccac
1440
atctctggct ggggtgttac agaaacagga aaagggtccc gccagctcct ggatgccaaa
1500
gtcaagctga ttgccaacac tttgtgcaac tcccgccaac tctatgacca catgattgat
1560
gacagtatga tctgtgcagg aaatcttcag aaacctgggc aagacacctg ccagggtgac
1620
tctggaggcc ccctgacctg tgagaaggac ggcacctact acgtctatgg gatagtgagc
1680
tggggcctgg agtgtgggaa gaggccaggg gtctacaccc aagttaccaa attcctgaat
1740
tggatcaaag ccaccatcaa aagtgaaagt ggcttctaag gtactgtctt ctggacctca
1800
gagcccactc tccttggcac cctgacaccg ggaggcctca tggccaacaa tggacacctc
1860
cagagcctcc aggggaccac acagtagact atccctactc taagcagaga caactgccac
1920
ccagcctggg ccttcccaga ccagcatttg cacaatatca ccaggcttct tctgcctccc
1980
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2040
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tgcagactcc agaatcccca gcatcagcgg gaaccaccat cacatcttta ttcctcagcc
2160
cagacactcg aggcactcaa cagaatcagc catccacgtc taggtatcag agaggaccac
2220
aaatacaaca ttctccatct gctttcagag ttattatttt aataaaggaa gatctgggat
2280
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2340
acaaacttcc tctctggcct ctcaggaatc agggtggaca tggctcacaa cagcagggcc
2400
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2460
tctccagcct ccactgcttc tgccccccgg taagctccct ggagacccag gccccttgcg
2520
ttggccagtt ccgcagcccg ccgagccatt tccactttgt aggagccagg aggggtccag
2580

3678

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ccaacacctc tggtcaggtt caagtctgat ttatacttga catcactctg cagctggtgg
2640
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2700
tgcctgtagt gcacatcact ggccagctgc tggctcctct tggcctgaag gaggccgggc
2760
tggtctgtgc tgctgtgaaa ctgggaccga ctcttggcaa agtccttctt gtactcattg
2820
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2940
gcgatctccc tagatgcccg ggcagtctgg aaggggatgg catccagcct gaagtcataa
3000
ctgccagccc gggtctgctc ccaggagttt ctgtagactt tgtcactcag atgcagcgca
3060
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3120
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3180
accaggtctg gggagtcaac cactgtggtg aacttgatac tgtctggttt tttacggtac
3240
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3300
gccagccatc ctatgccctt catgccgatc aggtctgact tgtagcgcaa ctcactctgc
3360
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3480
aggtgcacca tgtccatggg cagatggaac tgggcttggc tgctggtcgc ccccctcctg
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3600
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3623


<210> 4496
<211> 560
<212> PRT
<213> Homo sapiens


<400> 4496
Met Phe Ala Arg Met Ser Asp Leu His Val Leu Leu Leu Met Ala Leu
 1               5                  10                  15
Val Gly Lys Thr Ala Cys Gly Phe Ser Leu Met Ser Leu Leu Glu Ser
            20                  25                  30
Leu Asp Pro Asp Trp Thr Pro Asp Gln Tyr Asp Tyr Ser Tyr Glu Asp
        35                  40                  45
Tyr Asn Gln Glu Glu Asn Thr Ser Ser Thr Leu Thr His Ala Glu Asn
    50                  55                  60
Pro Asp Trp Tyr Tyr Thr Glu Asp Gln Ala Asp Pro Cys Gln Pro Asn
65                  70                  75                  80
Pro Cys Glu His Gly Gly Asp Cys Leu Val His Gly Ser Thr Phe Thr
```

```
                          85                    90                    95
Cys Ser Cys Leu Ala Pro Phe Ser Gly Asn Lys Cys Gln Lys Val Gln
                100                   105                   110
Asn Thr Cys Lys Asp Asn Pro Cys Gly Arg Gly Gln Cys Leu Ile Thr
            115                   120                   125
Gln Ser Pro Pro Tyr Tyr Arg Cys Val Cys Lys His Pro Tyr Thr Gly
        130                   135                   140
Pro Ser Cys Ser Gln Val Val Pro Val Cys Arg Pro Asn Pro Cys Gln
    145                   150                   155                   160
Asn Gly Ala Thr Cys Ser Arg His Lys Arg Arg Ser Lys Phe Thr Cys
                165                   170                   175
Ala Cys Pro Asp Gln Phe Lys Gly Lys Phe Cys Glu Ile Gly Ser Asp
                180                   185                   190
Asp Cys Tyr Val Gly Asp Gly Tyr Ser Tyr Arg Gly Lys Met Asn Arg
            195                   200                   205
Thr Val Asn Gln His Ala Cys Leu Tyr Trp Asn Ser His Leu Leu Leu
        210                   215                   220
Gln Glu Asn Tyr Asn Met Phe Met Glu Asp Ala Glu Thr His Gly Ile
    225                   230                   235                   240
Gly Glu His Asn Phe Cys Arg Asn Pro Asp Ala Asp Glu Lys Pro Trp
                245                   250                   255
Cys Phe Ile Lys Val Thr Asn Asp Lys Val Lys Trp Glu Tyr Cys Asp
                260                   265                   270
Val Ser Ala Cys Ser Ala Gln Asp Val Ala Tyr Pro Glu Glu Ser Pro
            275                   280                   285
Thr Glu Pro Ser Thr Lys Leu Pro Gly Phe Asp Ser Cys Gly Lys Thr
        290                   295                   300
Glu Ile Ala Glu Arg Lys Ile Lys Arg Ile Tyr Gly Gly Phe Lys Ser
    305                   310                   315                   320
Thr Ala Gly Lys His Pro Trp Gln Ala Ser Leu Gln Ser Ser Leu Pro
                325                   330                   335
Leu Thr Ile Ser Met Pro Gln Gly His Phe Cys Gly Gly Ala Leu Ile
            340                   345                   350
His Pro Cys Trp Val Leu Thr Ala Ala His Cys Thr Asp Ile Lys Thr
            355                   360                   365
Arg His Leu Lys Val Val Leu Gly Asp Gln Asp Leu Lys Lys Glu Glu
    370                   375                   380
Phe His Glu Gln Ser Phe Arg Val Glu Lys Ile Phe Lys Tyr Ser His
385                   390                   395                   400
Tyr Asn Glu Arg Asp Glu Ile Pro His Asn Asp Ile Ala Leu Leu Lys
                405                   410                   415
Leu Lys Pro Val Asp Gly His Cys Ala Leu Glu Ser Lys Tyr Val Lys
            420                   425                   430
Thr Val Cys Leu Pro Asp Gly Ser Phe Pro Ser Gly Ser Glu Cys His
            435                   440                   445
Ile Ser Gly Trp Gly Val Thr Glu Thr Gly Lys Gly Ser Arg Gln Leu
        450                   455                   460
Leu Asp Ala Lys Val Lys Leu Ile Ala Asn Thr Leu Cys Asn Ser Arg
465                   470                   475                   480
Gln Leu Tyr Asp His Met Ile Asp Asp Ser Met Ile Cys Ala Gly Asn
                485                   490                   495
Leu Gln Lys Pro Gly Gln Asp Thr Cys Gln Gly Asp Ser Gly Gly Pro
            500                   505                   510
Leu Thr Cys Glu Lys Asp Gly Thr Tyr Tyr Val Tyr Gly Ile Val Ser
```

```
          515                    520                    525
Trp Gly Leu Glu Cys Gly Lys Arg Pro Gly Val Tyr Thr Gln Val Thr
     530                    535                    540
Lys Phe Leu Asn Trp Ile Lys Ala Thr Ile Lys Ser Glu Ser Gly Phe
545                    550                    555                    560
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<210> 4497
<211> 840
<212> DNA
<213> Homo sapiens

<400> 4497
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aagcgacagg agcgtttgga gcagtactgt ggggagccca aggccagcac tacctcagat
120
ggagatgaga gcccccatc cagccctgga aacccagttc agggacagtg tggtgaagaa
180
gaggactcac tggatctatc tagcactttt gtgtctctgg ctttgcgcaa ggttggggat
240
tggcccctca gtgcccgcag agagaaggga ctgaaccagg agccccaagg cagggggtctg
300
gccctccaga agatgggtca agaggaagag agccctccaa gagaggagag gccccagcag
360
agtccaaagg catctccggg actgctggca gctgccttac aacagagcca ggaactggca
420
aagttgggta ccagctttgc tcaaaatggt ttctaccatg aggccgtggt cctcttcacc
480
caggccttga agctcaaccc ccaggaccac cggttatttg gaaatcgttc cttctgccat
540
gagcggttgg gtcagccagc gtgggccctg gctgatgccc aggtggccct accctacgg
600
cctggctggc cccgggggcct cttccgcctg ggcaaggcct tgatgggact acagcgcttc
660
agagaggcag ctgctgtgtt tcaggaaact ctgagaggtg ggtcccagcc tgacgcagcc
720
cgagagctcc gctcttgcct tctccacctc acactgcagg gtcagcgagg aggaatctgt
780
gcaccgcctc tgtcacctgg ggccctccag ccacttcccc atgctgagct ggcaccctca
840

<210> 4498
<211> 280
<212> PRT
<213> Homo sapiens

<400> 4498
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Xaa Arg Val Lys Gln Lys Ala Glu Lys Lys Arg Leu Lys Lys Lys Arg
 1               5                   10                   15
Gln Lys Glu Arg Lys Arg Gln Glu Arg Leu Glu Gln Tyr Cys Gly Glu
            20                  25                   30
Pro Lys Ala Ser Thr Thr Ser Asp Gly Asp Glu Ser Pro Pro Ser Ser
         35                  40                   45
Pro Gly Asn Pro Val Gln Gly Gln Cys Gly Glu Glu Glu Asp Ser Leu
```

```
      50                        55                        60
Asp Leu Ser Ser Thr Phe Val Ser Leu Ala Leu Arg Lys Val Gly Asp
65                        70                        75                        80
Trp Pro Leu Ser Ala Arg Arg Glu Lys Gly Leu Asn Gln Glu Pro Gln
                     85                        90                        95
Gly Arg Gly Leu Ala Leu Gln Lys Met Gly Gln Glu Glu Glu Ser Pro
                 100                       105                       110
Pro Arg Glu Glu Arg Pro Gln Gln Ser Pro Lys Ala Ser Pro Gly Leu
             115                       120                       125
Leu Ala Ala Ala Leu Gln Gln Ser Gln Glu Leu Ala Lys Leu Gly Thr
         130                       135                       140
Ser Phe Ala Gln Asn Gly Phe Tyr His Glu Ala Val Val Leu Phe Thr
145                       150                       155                       160
Gln Ala Leu Lys Leu Asn Pro Gln Asp His Arg Leu Phe Gly Asn Arg
                 165                       170                       175
Ser Phe Cys His Glu Arg Leu Gly Gln Pro Ala Trp Ala Leu Ala Asp
             180                       185                       190
Ala Gln Val Ala Leu Thr Leu Arg Pro Gly Trp Pro Arg Gly Leu Phe
         195                       200                       205
Arg Leu Gly Lys Ala Leu Met Gly Leu Gln Arg Phe Arg Glu Ala Ala
     210                       215                       220
Ala Val Phe Gln Glu Thr Leu Arg Gly Gly Ser Gln Pro Asp Ala Ala
225                       230                       235                       240
Arg Glu Leu Arg Ser Cys Leu Leu His Leu Thr Leu Gln Gly Gln Arg
                 245                       250                       255
Gly Gly Ile Cys Ala Pro Pro Leu Ser Pro Gly Ala Leu Gln Pro Leu
             260                       265                       270
Pro His Ala Glu Leu Ala Pro Ser
         275                       280
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<210> 4499
<211> 562
<212> DNA
<213> Homo sapiens

<400> 4499
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gctcacagtc ctgccgatgc tgagatgggg gcccgacatg gcttgagccc cttgaatgtc
120
attgcggagg atgggaccat gacctccctc tgcggggact ggttgcaggg tcttcaccgg
180
tttgtggccc gggaaaagat aatgtctgtg ctgagtgaac ggggcctatt ccggggcctc
240
cagaaccacc ccatggtact gcccatctgc aggtaatctc attttaactc ctttactaag
300
ggctacccca aaagggaatg tatggagctt aagggtgaca ataggatggg ctctgcaccc
360
ctccgttaga atacgagctc cgtgtcggtt ttattcgcta ttgtatcctc agtaccaagg
420
gcctggcatg gcatggggtc ctgtgcccct gggagaagtc acagggccgg aagagcagtg
480
gactcaccct gtctctcttt cagccgttct ggggatgtga tagaatacct gctgaagaac
540
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cagtggtttg tccgctgcca cg
562

<210> 4500
<211> 91
<212> PRT
<213> Homo sapiens

<400> 4500
Xaa Ile Thr Asp Tyr Ala Val Gln Pro His Val Gly Thr Gly Ala Val
 1   5   10   15
Lys Val Thr Pro Ala His Ser Pro Ala Asp Ala Glu Met Gly Ala Arg
                20   25   30
His Gly Leu Ser Pro Leu Asn Val Ile Ala Glu Asp Gly Thr Met Thr
            35   40   45
Ser Leu Cys Gly Asp Trp Leu Gln Gly Leu His Arg Phe Val Ala Arg
    50   55   60
Glu Lys Ile Met Ser Val Leu Ser Glu Arg Gly Leu Phe Arg Gly Leu
65   70   75   80
Gln Asn His Pro Met Val Leu Pro Ile Cys Arg
                85   90

<210> 4501
<211> 1866
<212> DNA
<213> Homo sapiens

<400> 4501
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120
acctctgctg ccgccgcccc cacgaacgtg tgacgacggc tggaggccaa cagagtccct
180
acaggtggtg ctcacggtaa tgcaccgaca atgagtggct gttttccagt ttctggcctc
240
cgctgcctat ctagggacgg caggatggcc gcgcagggcg cgccgcgctt cctcctgacc
300
ttcgacttcg acgagactat cgtggacgaa aacagcgacg attcgatcgt gcgcgccgcg
360
ccgggccagc ggctcccgga gagcctgcga gccacctacc gcgagggctt ctacaacgag
420
tacatgcagc gcgtcttcaa gtacctgggc gagcagggcg tgcggccgcg ggacctgagc
480
gccatctacg aagccatccc tttgtcgcca ggcatgagcg acctgctgca gtttgtggca
540
aaacagggcg cctgcttcga ggtgattctc atctccgatg ccaacacctt tggcgtggag
600
agctcgctgc gcgccgccgg ccaccacagc ctgttccgcc gcatcctcag caacccgtcg
660
gggccggatg cgcggggact gctggctctg cggccgttcc acacacacag ctgcgcgcgc
720
tgccccgcca acatgtgcaa gcacaaggtg ctcagcgact acctgcgcga gcgggcccac
780

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gacggcgtgc acttcgagcg cctcttctac gtgggtgatg gtgcaaatga cttctgcccc
840
atggggctgc tggcgggcgg cgacgtggcc ttcccgcgcc gcggctaccc catgcaccgc
900
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960
gaaacggctg cagatgtgcg cctccacctg caacaggtgc tgaagtcgtg ctgagtctgg
1020
ccgcctgcag gggggtaccc gggccaacgg cggagggggc ggggaaggga gattcggcaa
1080
agacagcttt actactccct tttcccttg gctttgttat gtccctctgg gaatttctgg
1140
aatctcgtat ttggggggctt ggggaagggg gctcagagcc gtccctatct attcagttaa
1200
cccacctcgg ctgcctcccc cactccactg tgcacggttg agttctggag tctgacccat
1260
cgcggggtgg cgcgcaaacc ttggaaggca gcagtatttc ctggtcctcc caactgggag
1320
gaaggggccc ccccggcagg tgagagaagg aacatctccc gccgctgtaa cttgttgcct
1380
cgggctgcgt gaccgcccct cctccagtct actgtggagg gaacccagga tcctgaaatt
1440
ctcctggccg caagaactcc ccacagaggc agaagagggt ctccacctat ggccccaggc
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ctttgcgatc ttgcttcacc caccgcgacc ccacactatt tctgtgctgt ccacactctc
1560
ttgcctcccg accccgcac tcccttctag cacccccaaa ggaaaagcca gaggaacaat
1620
cgcctcctgg tggtggtacg aggtagcgca ccgtccggct cgggtccgga cagccagtaa
1680
cctcgcagag agtgacggtg tctccttgca tcccagcctc gtctatgcag caagagacca
1740
gggacttcac caaagtcacc ctcgcgggct gggccttcca cgcatccccc ccaccccca
1800
tggaacagaa agccatgttt ttaagcagaa ccagcgaaac ccaagcccct ccttcctctg
1860
gtgttt
1866
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<210> 4502
<211> 267
<212> PRT
<213> Homo sapiens

<400> 4502
Met Ser Gly Cys Phe Pro Val Ser Gly Leu Arg Cys Leu Ser Arg Asp
 1   5   10   15
Gly Arg Met Ala Ala Gln Gly Ala Pro Arg Phe Leu Leu Thr Phe Asp
            20   25   30
Phe Asp Glu Thr Ile Val Asp Glu Asn Ser Asp Asp Ser Ile Val Arg
        35   40   45
Ala Ala Pro Gly Gln Arg Leu Pro Glu Ser Leu Arg Ala Thr Tyr Arg
    50   55   60
Glu Gly Phe Tyr Asn Glu Tyr Met Gln Arg Val Phe Lys Tyr Leu Gly

3684

```
65                     70                    75                    80
Glu Gln Gly Val Arg Pro Arg Asp Leu Ser Ala Ile Tyr Glu Ala Ile
                85                    90                    95
Pro Leu Ser Pro Gly Met Ser Asp Leu Leu Gln Phe Val Ala Lys Gln
            100                   105                   110
Gly Ala Cys Phe Glu Val Ile Leu Ile Ser Asp Ala Asn Thr Phe Gly
        115                   120                   125
Val Glu Ser Ser Leu Arg Ala Ala Gly His His Ser Leu Phe Arg Arg
        130                   135                   140
Ile Leu Ser Asn Pro Ser Gly Pro Asp Ala Arg Gly Leu Leu Ala Leu
145               150                   155                   160
Arg Pro Phe His Thr His Ser Cys Ala Arg Cys Pro Ala Asn Met Cys
                165                   170                   175
Lys His Lys Val Leu Ser Asp Tyr Leu Arg Glu Arg Ala His Asp Gly
            180                   185                   190
Val His Phe Glu Arg Leu Phe Tyr Val Gly Asp Gly Ala Asn Asp Phe
            195                   200                   205
Cys Pro Met Gly Leu Leu Ala Gly Gly Asp Val Ala Phe Pro Arg Arg
    210                   215                   220
Gly Tyr Pro Met His Arg Leu Ile Gln Glu Ala Gln Lys Ala Glu Pro
225               230                   235                   240
Ser Ser Phe Arg Ala Ser Val Val Pro Trp Glu Thr Ala Ala Asp Val
                245                   250                   255
Arg Leu His Leu Gln Gln Val Leu Lys Ser Cys
            260                   265
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<210> 4503
<211> 1983
<212> DNA
<213> Homo sapiens

<400> 4503
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acacaaccag ctgactcccg tagaggaaga cactgtggag gccagttctg gagctattgc
120
agcctcggtt gcccggccgg ggacccgagc cgaaaagtta tcgtcagaat gtcgggcaaa
180
gaccgaattg aaatctttcc ctcgcgaatg gcacagacca tcatgaaggc tcgattaaag
240
ggagcacaga caggtcgaaa cctcctgaag aaaaaatctg atgccttaac tcttcgattt
300
cgacagatcc taaagaagat aatagagact aaaatgttga tgggcgaagt gatgagagaa
360
gctgcctttt cactagctga agccaagttc acagcaggtg acttcagcac tacagttatc
420
caaaatgtca ataaagcgca agtgaagatt cgagcgaaga aagataatgt agcaggtgtt
480
actttgccag tatttgaaca ttaccatgaa ggaactgaca gttatgaact gactggttta
540
gccagaggtg gggaacagtt ggctaaatta agaggaatt atgccaaagc agtggaacta
600
ctggtggaac tagcttctct gcagacttct tttgttactt tggatgaagc tattaagata
660
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accaacaggc gtgtaaatgc cattgaacat ggtgagtatg tcatcattcc ccggattgaa
720
cgtactcttg cttatatcat cacagagctg gatgagagag agcgagaaga gttctatagg
780
ttaaagaaaa tacaagagaa gaaaaagatt ctaaaggaaa aatctgagaa ggacttggag
840
caaaggagag cagctggaga ggtgttggag cctgctaatc ttctggctga agagaaggac
900
gaggatcttc tatttgaata atctttcctg ttctggttct ttgagaaacc ctaacactgg
960
cttcatttta attcacagtg tgtaggtttg atttgtgtgg ctatttattt tttggcctaa
1020
gaatttcact ggttgtaaaa tttacctaga tgtctattta tgggattact tttgcagaat
1080
cataatttag caaccattta tcatggatga aagagatctg taaaacctgc ccaggaactt
1140
acagaattta ctttgcagaa gcgttatcat actccattta catctgtgtt acacgtgatc
1200
tgcttaccaa gcatattagg aaatacctct taggaagcat tagcggtctc aggccaatta
1260
ctgtggagca gctttcattc ctacccactt gcaaaccttg gcgctgttgt ctgagattgc
1320
tgcagccatt cttgttacca tggtacttct caaactttgt gaaaacctgc acttttcctt
1380
gcatgacagg ttcctgtctt gtctgtcatg ggagccattc tgccaattta aatgcgactg
1440
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1500
agtcatgttc tcatgctcag atcagtagtg tcagccagag ctttctctgc agacatgtag
1560
gaagtgggta gctatttttc ccactccatg tattagagtt ttacaaaaag gcttactttt
1620
gagacaactg ttgcattttg gggtactaat aaatgattgc cgatgagtta tgagggcatt
1680
ataatacttc cttatttgct aattaagaaa ataactagtt cctattttag agtaagaaat
1740
aaggtaactt tttactattt ataagtgata aaaacttgct ttcatatatg aagatgaagc
1800
atttgagtgg ccacatcagg tgtctgaggt ttttagtact gtttgatttg gcatgagcca
1860
tccatgggga ctcagtcttt ctcgcatcca tttccaggca tttttgacat gattagccat
1920
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1980
gtg
1983

<210> 4504
<211> 250
<212> PRT
<213> Homo sapiens

<400> 4504 Ser Gly Lys Asp Arg Ile Glu Ile Phe Pro Ser Arg Met Ala Gln
       1   5   10   15

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Thr Ile Met Lys Ala Arg Leu Lys Gly Ala Gln Thr Gly Arg Asn Leu
            20                  25              30
Leu Lys Lys Lys Ser Asp Ala Leu Thr Leu Arg Phe Arg Gln Ile Leu
            35              40              45
Lys Lys Ile Ile Glu Thr Lys Met Leu Met Gly Glu Val Met Arg Glu
    50                  55              60
Ala Ala Phe Ser Leu Ala Glu Ala Lys Phe Thr Ala Gly Asp Phe Ser
65              70                  75              80
Thr Thr Val Ile Gln Asn Val Asn Lys Ala Gln Val Lys Ile Arg Ala
            85                  90              95
Lys Lys Asp Asn Val Ala Gly Val Thr Leu Pro Val Phe Glu His Tyr
            100             105             110
His Glu Gly Thr Asp Ser Tyr Glu Leu Thr Gly Leu Ala Arg Gly Gly
        115             120             125
Glu Gln Leu Ala Lys Leu Lys Arg Asn Tyr Ala Lys Ala Val Glu Leu
    130             135             140
Leu Val Glu Leu Ala Ser Leu Gln Thr Ser Phe Val Thr Leu Asp Glu
145             150             155             160
Ala Ile Lys Ile Thr Asn Arg Arg Val Asn Ala Ile Glu His Gly Glu
            165             170             175
Tyr Val Ile Ile Pro Arg Ile Glu Arg Thr Leu Ala Tyr Ile Ile Thr
            180             185             190
Glu Leu Asp Glu Arg Glu Arg Glu Glu Phe Tyr Arg Leu Lys Lys Ile
        195             200             205
Gln Glu Lys Lys Lys Ile Leu Lys Glu Lys Ser Glu Lys Asp Leu Glu
    210             215             220
Gln Arg Arg Ala Ala Gly Glu Val Leu Glu Pro Ala Asn Leu Leu Ala
225             230             235             240
Glu Glu Lys Asp Glu Asp Leu Leu Phe Glu
            245             250
```

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<210> 4505
<211> 379
<212> DNA
<213> Homo sapiens

<400> 4505
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ccgggctctc tagagcatgt gttacagtca aatcagagac agaaagagcg gagaagacag
120
tggtggcttt ggctgtccag cctcagtaat cagatacatc ctacaccttc agcacagggc
180
caggcagcct tgaggcaaac atgtccccat ctcagggaat caggaccatt gagtgtgagg
240
catgtggccc tcctggccct ggagacagca tcacacccct cagggcccca cacgaaccag
300
gcccctagcc ctgcaacgtc tcctaaatgc ccctcagagc cagcaactcc atcttccaca
360
gattcactaa tcaagatct
379

<210> 4506
<211> 121
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<212> PRT
<213> Homo sapiens

<400> 4506
Met Pro Gly Gly Glu Pro Arg Leu Lys Met Leu Pro Thr Pro Val Pro
 1               5                  10                  15
Gly Ser Leu Glu His Val Leu Gln Ser Asn Gln Arg Gln Lys Glu Arg
             20                  25                  30
Arg Arg Gln Trp Trp Leu Trp Leu Ser Ser Leu Ser Asn Gln Ile His
         35                  40                  45
Pro Thr Pro Ser Ala Gln Gly Gln Ala Ala Leu Arg Gln Thr Cys Pro
     50                  55                  60
His Leu Arg Glu Ser Gly Pro Leu Ser Val Arg His Val Ala Leu Leu
65                  70                  75                  80
Ala Leu Glu Thr Ala Ser His Pro Ser Gly Pro His Thr Asn Gln Ala
             85                  90                  95
Pro Ser Pro Ala Thr Ser Pro Lys Cys Pro Ser Glu Pro Ala Thr Pro
             100                 105                 110
Ser Ser Thr Asp Ser Leu Ile Lys Ile
             115                 120
```

```
<210> 4507
<211> 3664
<212> DNA
<213> Homo sapiens

<400> 4507
agcacttcct taaaaagaaa agtctagtaa cgaggccatc ccggcgtcag aagcggtcag
60
gctgggtttg acaagatcag aaccgaaatg actacgaaag tgggaataca aggaggtgca
120
tttactacac attaacgttc agcgaactcc cacaatcttt aaacacacag ccattggaag
180
gacgatcttg agcaggaagg gttttttactc gttgtggtgc gctgtcttcc cgcttgcgtc
240
agggacctgc ccgactcagt ggccgccatg gcatcagatg aaggcaaact ttttgttgga
300
gggctgagtt ttgacaccaa tgagcagtcg ctggagcagg tcttctcaaa gtacggacag
360
atctctgaag tggtggttgt gaaagacagg gagacccaga gatctcgggg atttgggttt
420
gtcacctttg agaacattga cgacgctaag gatgccatga tggccatgaa tgggaagtct
480
gtagatggac ggcagatccg agtagaccag gcaggcaagt cgtcagacaa ccgatcccgt
540
gggtaccgtg gtggctctgc cggggggccgg ggcttcttcc gtggggggccg aggacggggc
600
cgtgggttct ctagaggagg aggggaccga ggctatgggg ggaaccggtt cgagtccagg
660
agtgggggct acggaggctc cagagactac tatagcagcc ggagtcagag tggtggctac
720
agtgaccgga gctcgggcgg gtcctacaga gacagttacg acagttacgc tacacacaac
780
```

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gagtaaaaac ccttcctgct caagatcgtc cttccaatgg ctgtgtgttt aaagattgtg
840
ggagcttcgc tgaacgttaa tgtgtagtaa atgcacctcc ttgtattccc actttcgtag
900
tcatttcggt tctgatcttg tcaaacccag cctgaccgct tctgacgccg ggatggcctc
960
gttactagac ttttcttttt aaggaagtgc tgtttttttt tgagggtttt caaaacattt
1020
tgaaaagcat ttactttttt gaccacgagc catgagtttt caaaaaaatc gggggttgtg
1080
tgggtttttg gtttttgttt tagttttttgg ttgcgttgcc tttttttttt tagtggggtt
1140
ggccccatga agtgggtgcc ccactcactt ctctgagatc gaacggactg tgaatccgct
1200
ctttgtcgga agctgagcaa gctgtggctt ttttccaact ccgtgtgacg tttctgagtg
1260
tagtgtggta ggaccccggc gggtgtggca gcaactgccc tggagcccca gcccctgcgt
1320
ccatctgtgc tgtgcgcccc acagtagacg tgcagacgtc cctgagaggt tcttgaagat
1380
gtttatttat attgtccttt tttactggaa gacgtacgca tactccatcg atgttgtatt
1440
tgcagtggct gaggaattct tgtacgcagt tttctttggc tttacgaagc cgattaaaag
1500
accgtgtgaa atgaaccttg ctctgacaat tcccttgcat tgcaccacac actccttgct
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1800
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1860
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1920
gagttctgag cattctctgc tagcctatgg aagctgcagc cctcggagga cagaagtgtt
1980
gtgcgcccaa cagaaccctc tgagacgcaa gctgctccct tggctagctc atatgtggaa
2040
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2100
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2160
ttttaacttt gtttttgttt ttttcaatta agctggaact aaagtcaggc ccagccatta
2220
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2280
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2340
gaccgtcttt ccagacctc tttaagtcac actcttaact tagctttctc tgatgtctgt
2400
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tgccgccatt agttttttc tagagcccac actggcccac atagctccat cccatacggg
2460

tagctggctc cagctgcgcc aaggtgcaga cccgccctgg gcatgctggc ctgtgacgga
2520

gcctgaggtc acagccccct gactagcctg agaccttcct aggggctgtg gctgtttccg
2580

gggaggccgg gaggggcagc tgtgagccct gtggaggacg ttgggagtaa cgctgctttg
2640

ctttggcagg ttgaaggggc ccggccagga ctcggggaag ggtggcctga gagcagcgat
2700

gacctctggg gtcactgtcc caggagggac ttcacctgga acaagagctg gaggcagccg
2760

cttgcccagg aggcttgtcc cctgaggcgc ttcgccagtg aggtgcgggc tcagggcctc
2820

gagtctctcc tggagcacgg gctgcggtgc gccggcagct tacggggcgg ccagtccttg
2880

cccacaacga tgtggagccc tgtgaaagtc ggattcgaat aaagggccac gtgtgcaccc
2940

agaaagccga gtctgtggtt caggggggtc tgtcggcgga gcggggccac tggaagaaaa
3000

gcctgcggac ctcggttcag cgcacgagta ggacccgaca gggaagactg caagggtcat
3060

tgtccgagca gtgaccgcgg ggggctcgcc actgaggggg ttcgcagcgc ggagactcca
3120

gtctcgcggg atctgaggcg cactcggctt cgagggagcg gcggccgcgc agccgctgtc
3180

aggccccgtc ttgggccgag tcccgggttc cctgtagcag gctggggagc ggggcgccac
3240

cttcctgggc cctggacgtg gccgacgcgt tctcagtgtc cgtgaggccg gggcaggagt
3300

ggcgggggtc gccccgaagt gggtgggaat gagcggcccg aggtcctgaa gtcggggtcc
3360

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3420

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3480

tccgtcctga tcccttggag cgggtcgacg aagcaagttc cgcggcgggc gcgcggggca
3540

ctgtgggtag cgccggggct caccaggcgg aagggggggcc cggcgtcaag ctccgcctcc
3600

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3660

cgcc
3664

<210> 4508
<211> 172
<212> PRT
<213> Homo sapiens

<400> 4508
Met Ala Ser Asp Glu Gly Lys Leu Phe Val Gly Gly Leu Ser Phe Asp
 1   5   10   15
Thr Asn Glu Gln Ser Leu Glu Gln Val Phe Ser Lys Tyr Gly Gln Ile

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                    20                      25                      30
      Ser Glu Val Val Val Val Lys Asp Arg Glu Thr Gln Arg Ser Arg Gly
               35                      40                      45
      Phe Gly Phe Val Thr Phe Glu Asn Ile Asp Asp Ala Lys Asp Ala Met
          50                      55                      60
      Met Ala Met Asn Gly Lys Ser Val Asp Gly Arg Gln Ile Arg Val Asp
      65                      70                      75                      80
      Gln Ala Gly Lys Ser Ser Asp Asn Arg Ser Arg Gly Tyr Arg Gly Gly
                       85                      90                      95
      Ser Ala Gly Gly Arg Gly Phe Phe Arg Gly Gly Arg Gly Arg Gly Arg
                  100                     105                     110
      Gly Phe Ser Arg Gly Gly Gly Asp Arg Gly Tyr Gly Gly Asn Arg Phe
               115                     120                     125
      Glu Ser Arg Ser Gly Gly Tyr Gly Gly Ser Arg Asp Tyr Tyr Ser Ser
          130                     135                     140
      Arg Ser Gln Ser Gly Gly Tyr Ser Asp Arg Ser Ser Gly Gly Ser Tyr
      145                     150                     155                     160
      Arg Asp Ser Tyr Asp Ser Tyr Ala Thr His Asn Glu
                       165                     170
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<210> 4509
<211> 11680
<212> DNA
<213> Homo sapiens

<400> 4509
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120
aaaagttttg gcatcaaggt ccagaatctt ccagtacgct ctacagatac aagccttaaa
180
gatggccttt tccatgaatt taagaaattt ggaaaagtaa cttcagtgca gatacatgga
240
acttcagaag agaggtatgg tctggtattc tttcggcagc aagaggacca agaaaaagcc
300
ttgactgcat caaaaggaaa acttttcttt ggcatgcaga ttgaagtaac agcatggata
360
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420
caccccaaag caacaagaac tctctttatt ggcaaccttg aaaaaaccac tacttaccat
480
gaccttcgca acatcttcca gcgctttgga gaaattgtgg atattgacat taagaaagta
540
aatggagttc ctcagtatgc gtttctgcaa tactgtgata ttgctagcgt ttgtaaagct
600
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720
ttaacacgac atttctgccg atatgggcct gtggtaaagg tggtgtttga ccgcttaaaa
780
ggcatggccc tggttctcta caatgaaatt gaatatgcac aagcagctgt aaaagagacc
840
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aaagggagga aaatcggtgg gaataaaatt aaggtggatt ttgcaaatcg ggaaagtcag
900
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960
ttagccgaaa gaagagagga acgaagggca tcctacgact ataaccaaga tcgtacatat
1020
tatgagagtg ttcgaactcc aggcacttat cctgaggatt ccaggcggga ctatccagct
1080
cgagggagag agtttttattc agaatgggaa acttaccaag gagactacta tgaatcacga
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1260
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1380
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1440
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1500
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tctcagtctt cagaaacgga ccaagaaaat gagcgagagc aaagccctga aaagcccagg
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1800
cacactcctg tggaaaagtt gaaagccaag cttgataatg acactgtcaa atcttctgcc
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1920
gaatcagtta gaatgaaagt accaaaggaa aaggggcttt caagccatgt tgaagtggtg
1980
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2280
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2340
tctgttgggt ctggctcaag gcccagctca gacctacaag caagactggg agaactagca
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2460
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                                    3692

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2580
gtaaatactg aagaaaaat tggcattgac atcgatcaca cgcagagtta ccgaaaacaa
2640
atggaacaga gtcgtaggaa acagcagatg gaaatggaaa tagccaagtc tgagaagttt
2700
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2760
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2820
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2880
gaagattctg aaaggactgg tggttctccc agtgtccgac atggttcctt ccatgaagat
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aaagtcctcc cctattctaa cataacagtc agggaagagt ctttaaaatt taatccttat
3060
gattctagca ggagagaaca gatggcagat atggccaaaa taaaactatc tgtcttgaat
3120
tctgaagatg aactaaatcg ttgggactct cagatgaaac aggatgctgg cagatttgat
3180
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3240
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3300
cccagagcct ctgcattata tgaaagttct cgattgtctt ttttattgag ggacagagaa
3360
gacaagctac gtgagcgaga tgaaagactc tctagttctt tagaaaggaa caaatttttac
3420
tcttttgcat tggataagac aatcacacca gacactaaag ctttgcttga aagagctaaa
3480
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Ala Thr Arg Thr Leu Phe Ile Gly Asn Leu Glu Lys Thr Thr Thr Tyr
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His Asp Leu Arg Asn Ile Phe Gln Arg Phe Gly Glu Ile Val Asp Ile
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Asp Ile Lys Lys Val Asn Gly Val Pro Gln Tyr Ala Phe Leu Gln Tyr

3698

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Tyr His Cys Met Glu Lys Ser Gly Gln Asp Ile Arg Asp Phe Tyr Glu
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Val Glu Gln Pro Arg Val Thr Arg Lys Arg Leu Glu Arg Glu Leu Gln
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Glu Ala Ala Ala Val Pro Thr Thr Pro Arg Arg Gly Arg Pro Pro Lys
           1540               1545               1550
Thr Arg Arg Arg Ala Asp Glu Glu Glu Glu Asn Glu Ala Lys Glu Pro
           1555               1560               1565
Ala Glu Thr Leu Lys Pro Pro Glu Gly Trp Arg Ser Pro Arg Ser Gln
           1570               1575               1580
Lys Thr Ala Ala Gly Gly Gly Pro Gln Gly Lys Lys Gly Lys Asn Glu
1585               1590               1595               1600
Pro Lys Val Asp Ala Thr Arg Pro Glu Ala Thr Thr Glu Val Gly Pro
           1605               1610               1615
Gln Ile Gly Val Lys Glu Ser Ser Met Glu Pro Lys Ala Ala Glu Glu
           1620               1625               1630
Glu Ala Gly Ser Glu Gln Lys Arg Asp Arg Lys Asp Ala Gly Thr Asp
           1635               1640               1645
Lys Asn Pro Pro Glu Thr Ala Pro Val Glu Val Val Glu Lys Lys Pro
      1650               1655               1660
Ala Pro Glu Lys Asn Ser Lys Ser Lys Arg Gly Arg Ser Arg Asn Ser
1665               1670               1675               1680
Arg Leu Ala Val Asp Lys Ser Ala Ser Leu Lys Asn Val Asp Ala Ala
           1685               1690               1695
Val Ser Pro Arg Gly Ala Ala Ala Gln Ala Gly Glu Arg Glu Ser Gly
           1700               1705               1710
Val Val Ala Val Ser Pro Glu Lys Ser Glu Ser Pro Gln Lys Glu Asp
           1715               1720               1725
Gly Leu Ser Ser Gln Leu Lys Ser Asp Pro Val Asp Pro Asp Lys Glu
           1730               1735               1740
Pro Glu Lys Glu Asp Val Ser Ala Ser Gly Pro Ser Pro Glu Ala Thr
1745               1750               1755               1760
Gln Leu Ala Lys Gln Met Glu Leu Glu Gln Ala Val Glu His Ile Ala
           1765               1770               1775
Lys Leu Ala Glu Ala Ser Ala Ser Ala Ala Tyr Lys Ala Asp Ala Pro
           1780               1785               1790
Glu Gly Leu Ala Pro Glu Asp Arg Asp Lys Pro Ala His Gln Ala Ser
```

```
          1795                1800                1805
Glu Thr Glu Leu Ala Ala Ala Ile Gly Ser Ile Ile Asn Asp Ile Ser
     1810                1815                1820
Gly Glu Pro Glu Asn Phe Pro Ala Pro Pro Tyr Pro Gly Glu Ser
1825                1830                1835                1840
Gln Thr Asp Leu Gln Pro Pro Ala Gly Ala Gln Ala Leu Gln Pro Ser
               1845                1850                1855
Glu Glu Gly Met Glu Thr Asp Glu Ala Val Ser Gly Ile Leu Glu Thr
          1860                1865                1870
Glu Ala Ala Thr Glu Ser Ser Arg Pro Pro Val Asn Ala Pro Asp Pro
     1875                1880                1885
Ser Ala Gly Pro Thr Asp Thr Lys Glu Ala Arg Gly Asn Ser Ser Glu
     1890                1895                1900
Thr Ser His Ser Val Pro Glu Ala Lys Gly Ser Lys Glu Val Glu Val
1905                1910                1915                1920
Thr Leu Val Arg Lys Asp Lys Gly Arg Gln Lys Thr Thr Arg Ser Arg
               1925                1930                1935
Arg Lys Arg Asn Thr Asn Lys Lys Val Val Ala Pro Val Glu Ser His
          1940                1945                1950
Val Pro Glu Ser Asn Gln Ala Gln Gly Glu Ser Pro Ala Ala Asn Glu
     1955                1960                1965
Gly Thr Thr Val Gln His Pro Glu Ala Pro Gln Glu Glu Lys Gln Ser
     1970                1975                1980
Glu Lys Pro His Ser Thr Pro Pro Gln Ser Cys Thr Ser Asp Leu Ser
1985                1990                1995                2000
Lys Ile Pro Ser Thr Glu Asn Ser Ser Gln Glu Ile Ser Val Glu Glu
               2005                2010                2015
Arg Thr Pro Thr Lys Ala Ser Val Pro Pro Asp Leu Pro Pro Pro Pro
          2020                2025                2030
Gln Pro Ala Pro Val Asp Glu Glu Pro Gln Ala Arg Phe Arg Val His
     2035                2040                2045
Ser Ile Ile Glu Ser Asp Pro Val Thr Pro Pro Ser Asp Pro Ser Ile
     2050                2055                2060
Pro Ile Pro Thr Leu Pro Ser Val Thr Ala Ala Lys Leu Ser Pro Pro
2065                2070                2075                2080
Val Ala Ser Gly Gly Ile Pro His Gln Ser Pro Pro Thr Lys Val Thr
               2085                2090                2095
Glu Trp Ile Thr Arg Gln Glu Glu Pro Arg Ala Gln Ser Thr Pro Ser
          2100                2105                2110
Pro Ala Leu Pro Pro Asp Thr Lys Ala Ser Asp Val Asp Thr Ser Ser
     2115                2120                2125
Ser Thr Leu Arg Lys Ile Leu Met Asp Pro Lys Tyr Val Ser Ala Thr
     2130                2135                2140
Ser Val Thr Ser Thr Ser Val Thr Thr Ala Ile Ala Glu Pro Val Ser
2145                2150                2155                2160
Ala Ala Pro Cys Leu His Glu Ala Pro Pro Pro Val Asp Ser Lys
2165                2170                2175
Lys Pro Leu Glu Glu Lys Thr Ala Pro Pro Val Thr Asn Asn Ser Glu
               2180                2185                2190
Ile Gln Ala Ser Glu Val Leu Val Ala Ala Asp Lys Glu Lys Val Ala
          2195                2200                2205
Pro Val Ile Ala Pro Lys Ile Thr Ser Val Ile Ser Arg Met Pro Val
     2210                2215                2220
Ser Ile Asp Leu Glu Asn Ser Gln Lys Ile Thr Leu Ala Lys Pro Ala
```

```
      2225                2230                2235                2240
Pro Gln Thr Leu Thr Gly Leu Val Ser Ala Leu Thr Gly Leu Val Asn
                    2245                2250                2255
Val Ser Leu Val Pro Val Asn Ala Leu Lys Gly Pro Val Lys Gly Ser
                2260                2265                2270
Val Thr Thr Leu Lys Ser Leu Val Ser Thr Pro Ala Gly Pro Val Asn
            2275                2280                2285
Val Leu Lys Gly Pro Val Asn Val Leu Thr Gly Pro Val Asn Val Leu
        2290                2295                2300
Thr Thr Pro Val Asn Ala Thr Val Gly Thr Val Asn Ala Ala Pro Gly
    2305                2310                2315                2320
Thr Val Asn Ala Ala Ala Ser Ala Val Asn Ala Thr Ala Ser Ala Val
                2325                2330                2335
Thr Val Thr Ala Gly Ala Val Thr Ala Ala Ser Gly Gly Val Thr Ala
                2340                2345                2350
Thr Thr Gly Thr Val Thr Met Ala Gly Ala Val Ile Ala Pro Ser Thr
            2355                2360                2365
Lys Cys Lys Gln Arg Ala Ser Ala Asn Glu Asn Ser Arg Phe His Pro
        2370                2375                2380
Gly Ser Met Pro Val Ile Asp Asp Arg Pro Ala Asp Ala Gly Ser Gly
    2385                2390                2395                2400
Ala Gly Leu Arg Val Asn Thr Ser Glu Gly Val Val Leu Leu Ser Tyr
                2405                2410                2415
Ser Gly Gln Lys Thr Glu Gly Pro Gln Arg Ile Ser Ala Lys Ile Ser
                2420                2425                2430
Gln Ile Pro Pro Ala Ser Ala Met Asp Ile Glu Phe Gln Gln Ser Val
            2435                2440                2445
Ser Lys Ser Gln Val Lys Pro Asp Ser Val Thr Ala Ser Gln Pro Pro
        2450                2455                2460
Ser Lys Gly Pro Gln Ala Pro Ala Gly Tyr Ala Asn Val Ala Thr His
    2465                2470                2475                2480
Ser Thr Leu Val Leu Thr Ala Gln Thr Tyr Asn Ala Ser Pro Val Ile
                2485                2490                2495
Ser Ser Val Lys Ala Asp Arg Pro Ser Leu Glu Lys Pro Glu Pro Ile
            2500                2505                2510
His Leu Ser Val Ser Thr Pro Val Thr Gln Gly Gly Thr Val Lys Val
        2515                2520                2525
Leu Thr Gln Gly Ile Asn Thr Pro Pro Val Leu Val His Asn Gln Leu
        2530                2535                2540
Val Leu Thr Pro Ser Ile Val Thr Thr Asn Lys Lys Leu Ala Asp Pro
    2545                2550                2555                2560
Val Thr Leu Lys Ile Glu Thr Lys Val Leu Gln Pro Ala Asn Leu Gly
                2565                2570                2575
Ser Thr Leu Thr Pro His His Pro Pro Ala Leu Pro Ser Lys Leu Pro
            2580                2585                2590
Thr Glu Val Asn His Val Pro Ser Gly Pro Ser Ile Pro Ala Asp Arg
        2595                2600                2605
Thr Val Ser His Leu Ala Ala Ala Lys Leu Asp Ala His Ser Pro Arg
    2610                2615                2620
Pro Ser Gly Pro Gly Pro Ser Ser Phe Pro Arg Ala Ser His Pro Ser
    2625                2630                2635                2640
Ser Thr Ala Ser Thr Ala Leu Ser Thr Asn Ala Thr Val Met Leu Ala
                2645                2650                2655
Ala Gly Ile Pro Val Pro Gln Phe Ile Ser Ser Ile His Pro Glu Gln
```

```
              2660                   2665                   2670
Ser Val Ile Met Pro Pro His Ser Ile Thr Gln Thr Val Ser Leu Ser
         2675                   2680                   2685
His Leu Ser Gln Gly Glu Val Arg Met Asn Thr Pro Thr Leu Pro Ser
         2690                   2695                   2700
Ile Thr Tyr Ser Ile Arg Pro Glu Ala Leu His Ser Pro Arg Ala Pro
2705                   2710                   2715                   2720
Leu Gln Pro Gln Gln Ile Glu Val Arg Ala Pro Gln Arg Ala Ser Thr
                   2725                   2730                   2735
Pro Gln Pro Ala Pro Ala Gly Val Pro Ala Leu Ala Ser Gln His Pro
              2740                   2745                   2750
Pro Glu Glu Glu Val His Tyr His Leu Pro Val Ala Arg Ala Thr Ala
         2755                   2760                   2765
Pro Val Gln Ser Glu Val Leu Val Met Gln Ser Glu Tyr Arg Leu His
         2770                   2775                   2780
Pro Tyr Thr Val Pro Arg Asp Val Arg Ile Met Val His Pro His Val
2785                   2790                   2795                   2800
Thr Ala Val Ser Glu Gln Pro Arg Ala Ala Asp Gly Val Val Lys Val
                   2805                   2810                   2815
Pro Pro Ala Ser Lys Ala Pro Gln Gln Pro Gly Lys Glu Ala Ala Lys
              2820                   2825                   2830
Thr Pro Asp Ala Lys Ala Ala Pro Thr Pro Thr Pro Ala Pro Val Pro
         2835                   2840                   2845
Val Pro Val Pro Leu Pro Ala Pro Ala Pro Ala Pro His Gly Glu Ala
    2850                   2855                   2860
Arg Ile Leu Thr Val Thr Pro Ser Asn Gln Leu Gln Gly Leu Pro Leu
2865                   2870                   2875                   2880
Thr Pro Pro Val Val Val Thr His Gly Val Gln Ile Val His Ser Ser
                   2885                   2890                   2895
Gly Glu Leu Phe Gln Glu Tyr Arg Tyr Gly Asp Ile Arg Thr Tyr His
              2900                   2905                   2910
Pro Pro Ala Gln Leu Thr His Thr Gln Phe Pro Ala Ala Ser Ser Val
         2915                   2920                   2925
Gly Leu Pro Ser Arg Thr Lys Thr Ala Ala Gln Gly Pro Pro Pro Glu
    2930                   2935                   2940
Gly Glu Pro Leu Gln Pro Pro Gln Pro Val Gln Ser Thr Gln Pro Ala
2945                   2950                   2955                   2960
Gln Pro Ala Pro Pro Cys Pro Pro Ser Gln Leu Gly Gln Pro Gly Gln
                   2965                   2970                   2975
Pro Pro Ser Ser Lys Met Pro Gln Val Ser Gln Glu Ala Lys Gly Thr
              2980                   2985                   2990
Gln Thr Gly Val Glu Gln Pro Arg Leu Pro Ala Gly Pro Ala Asn Arg
         2995                   3000                   3005
Pro Pro Glu Pro His Thr Gln Val Gln Arg Ala Gln Ala Glu Thr Gly
    3010                   3015                   3020
Pro Thr Ser Phe Pro Ser Pro Val Ser Val Ser Met Lys Pro Asp Leu
3025                   3030                   3035                   3040
Pro Val Ser Leu Pro Thr Gln Thr Ala Pro Lys Gln Pro Leu Phe Val
                   3045                   3050                   3055
Pro Thr Thr Ser Gly Pro Ser Thr Pro Pro Gly Leu Val Leu Pro His
              3060                   3065                   3070
Thr Glu Phe Gln Pro Ala Pro Lys Gln Asp Ser Ser Pro His Leu Thr
         3075                   3080                   3085
Ser Gln Arg Pro Val Asp Met Val Gln Leu Leu Lys Lys Tyr Pro Ile
```

```
        3090                    3095                   3100
Val Trp Gln Gly Leu Leu Ala Leu Lys Asn Asp Thr Ala Ala Val Gln
3105                    3110                   3115                   3120
Leu His Phe Val Ser Gly Asn Asn Val Leu Ala His Arg Ser Leu Pro
                3125                   3130                   3135
Leu Ser Glu Gly Gly Pro Pro Leu Arg Ile Ala Gln Arg Met Arg Leu
            3140                   3145                   3150
Glu Ala Thr Gln Leu Glu Gly Val Ala Arg Arg Met Thr Leu Ala Ser
        3155                   3160                   3165
Ala Ser Val Glu Thr Asp Tyr Cys Leu Leu Leu Ala Leu Pro Cys Gly
        3170                   3175                   3180
Arg Asp Gln Glu Asp Val Val Ser Gln Thr Glu Ser Leu Lys Ala Ala
3185                   3190                   3195                   3200
Phe Ile Thr Tyr Leu Gln Ala Lys Gln Ala Ala Gly Ile Ile Asn Val
                3205                   3210                   3215
Pro Asn Pro Gly Ser Asn Gln Pro Ala Tyr Val Leu Gln Ile Phe Pro
            3220                   3225                   3230
Pro Cys Glu Phe Ser Glu Ser His Leu Ser Arg Leu Ala Pro Asp Leu
        3235                   3240                   3245
Leu Ala Ser Ile Ser Asn Ile Ser Pro His Leu Met Ile Val Ile Ala
    3250                   3255                   3260
Ser Val
3265


<210> 4511
<211> 1375
<212> DNA
<213> Homo sapiens


<400> 4511
gctggtcgga ccaggtctct tcccatcact attgaaatgc taaaagttcc agacgatgaa
60
gaagaagagg agcaaacctg tccatccaca ttcagtgaag aaatgacacc tacctcagtc
120
attcctaaat taccacagtg tctacgggag gaagaagaga aggagagcga ctctgattca
180
gaaggtccca ttcagtaccg agatgaagaa gatgaagatg aaagctatca gagtgcactc
240
gccaacaaag tgaagaggaa agacacactg gcaatgaagt tgaaccacag acccagtgaa
300
ccagagttga acctgaattc ttggccttgt aaaagcaagg aggagtggaa tgaaatacgg
360
caccagattg gaaacacact gatccggcga ctgagtcaaa gaccaacacc agaagaacta
420
gaacaacgca atatattgca acctaaaaat gaagctgatc gtcaggcaga aaaacgagaa
480
attaaacgtc ggctcactag aaagctcagt caaaggccaa ctgtcgctga actccttgcc
540
aggaagattc tgaggtttaa tgaatatgta gaggtaacag atgctcaaga ttatgaccgg
600
cgagccgaca aaccttggac caaactgacc cctgctgaca aggctgccat aagaaaagaa
660
ttaaatgaat ttaaaagctc cgagatggag gttcatgaag agagcaaaca ttttacacgc
720
```

```
taccatcgtc catgatgcca aaggttgaga gaggaatcaa catggctgct ttgctgcttc
780
cttctccaaa gtgacatatg gagggaactt tagcacttcc cagcacagcc agaattgcat
840
cctctgggat cttctgaggt ggacagcact ttgaatgtag catttcactg gaacagagtc
900
ttatgtgctg caccgggggc aaaacaacac tttgtcagtg cttttgaacc tttcaatatt
960
gtagcatgct tgaggagttt ttcccttact ggccaccaaa gttctgaacc acttgcaggt
1020
tccaggtttt actggctgca ccacacccct tcccctagat gactgcctgt gcagagacac
1080
agtttgcacc attagcctta cctgccctgc cctgattgtg agacccaaat gtgtaggctc
1140
taaattccag ccatcaaatc caattcctgg tggggaaaac cttctggaga cccccaacct
1200
tctgataaaa gagtctctac ctccagggaa agccttctta ccacactggc atatcagatg
1260
aaagcattgc actgtacctc tcgtaacaca gcaatacagt cctcttgagg cactcaagcc
1320
tgagaggaag ctcaggatct gacatgttct tccttttcct cacaagtcat catga
1375
```

```
<210> 4512
<211> 244
<212> PRT
<213> Homo sapiens
```

```
<400> 4512
Ala Gly Arg Thr Arg Ser Leu Pro Ile Thr Ile Glu Met Leu Lys Val
1               5                   10                  15
Pro Asp Asp Glu Glu Glu Glu Glu Gln Thr Cys Pro Ser Thr Phe Ser
            20                  25                  30
Glu Glu Met Thr Pro Thr Ser Val Ile Pro Lys Leu Pro Gln Cys Leu
            35                  40                  45
Arg Glu Glu Glu Glu Lys Glu Ser Asp Ser Asp Ser Glu Gly Pro Ile
    50                  55                  60
Gln Tyr Arg Asp Glu Glu Asp Glu Asp Glu Ser Tyr Gln Ser Ala Leu
65                  70                  75                  80
Ala Asn Lys Val Lys Arg Lys Asp Thr Leu Ala Met Lys Leu Asn His
            85                  90                  95
Arg Pro Ser Glu Pro Glu Leu Asn Leu Asn Ser Trp Pro Cys Lys Ser
            100                 105                 110
Lys Glu Glu Trp Asn Glu Ile Arg His Gln Ile Gly Asn Thr Leu Ile
            115                 120                 125
Arg Arg Leu Ser Gln Arg Pro Thr Pro Glu Glu Leu Glu Gln Arg Asn
    130                 135                 140
Ile Leu Gln Pro Lys Asn Glu Ala Asp Arg Gln Ala Glu Lys Arg Glu
145                 150                 155                 160
Ile Lys Arg Arg Leu Thr Arg Lys Leu Ser Gln Arg Pro Thr Val Ala
            165                 170                 175
Glu Leu Leu Ala Arg Lys Ile Leu Arg Phe Asn Glu Tyr Val Glu Val
            180                 185                 190
Thr Asp Ala Gln Asp Tyr Asp Arg Arg Ala Asp Lys Pro Trp Thr Lys
```

```
                195                 200                 205
Leu Thr Pro Ala Asp Lys Ala Ala Ile Arg Lys Glu Leu Asn Glu Phe
        210                 215                 220
Lys Ser Ser Glu Met Glu Val His Glu Glu Ser Lys His Phe Thr Arg
225                 230                 235                 240
Tyr His Arg Pro
```

```
<210> 4513
<211> 545
<212> DNA
<213> Homo sapiens
```

```
<400> 4513
aagctttact acacagctac agtaatggag acagcaggta ccgctctaca gcaaaagacc
60
tgcatcaccg agtccacgca cacttgcctt gcagcttcat gtcagagagc agctgagcag
120
tcagcacctg cacccggggg ttgggccctg gggcttcctt cccagtccag cctctcagct
180
cctgtctgtg gcttagcacg tgcaccacag agccaaccag atcctctgta aacttttgga
240
cttctctggc cttcacggga ccttctgtgg cagaaatcat tttcataatc atgagactct
300
tctcctcgga gtttcctttc aacaggtggg acatggatgc tgtgaactgc tcctgggaca
360
cgttctcact gggtcccttc gccttccctg tcaggtcgac cctccgcatg ccatcataca
420
gcctggtgac catctctggg ggaagagctt ccccgacgtg gttctgtagt gccttcagag
480
agaaggattt ggatgagaca ttcgggctgt ttttatctga tgacagagca tcaaacaatt
540
gatca
545
```

```
<210> 4514
<211> 122
<212> PRT
<213> Homo sapiens
```

```
<400> 4514
Met Val Thr Arg Leu Tyr Asp Gly Met Arg Arg Val Asp Leu Thr Gly
1                 5                 10                  15
Lys Ala Lys Gly Pro Ser Glu Asn Val Ser Gln Glu Gln Phe Thr Ala
            20                  25                  30
Ser Met Ser His Leu Leu Lys Gly Asn Ser Glu Glu Lys Ser Leu Met
        35                  40                  45
Ile Met Lys Met Ile Ser Ala Thr Glu Gly Pro Val Lys Ala Arg Glu
    50                  55                  60
Val Gln Lys Phe Thr Glu Asp Leu Val Gly Ser Val Val His Val Leu
65                  70                  75                  80
Ser His Arg Gln Glu Leu Arg Gly Trp Thr Gly Lys Glu Ala Pro Gly
                85                  90                  95
Pro Asn Pro Arg Val Gln Val Leu Thr Ala Gln Leu Leu Ser Asp Met
```

```
              100                105                  110
Lys Leu Gln Gly Lys Cys Ala Trp Thr Arg
        115                120


<210> 4515
<211> 3207
<212> DNA
<213> Homo sapiens


<400> 4515
ncaaacaacc actgggaggc actgtttccc ccccatcccg ccctgggcag ggcacgtccc
60
actccccccg cgcggttgct gggaacccgg aggccgcccg ggcggagcgc ggagggcgcg
120
tcggaacctg gccggggccc tccacccgcg ccgtggtccc ggtggttgcg ccccgtggcg
180
agcgacgccg acaactttgc gatggagttt gtgcgggcgc tgtggctggg cctggcgctg
240
gcgctggggc cggggtccgc ggggggccac cctcagccgt gcggcgtcct ggcgcgcctc
300
gggggctccg tgcgcctggg cgccctcctg ccccgcgcgc ctctcgcccg cgcccgcgcc
360
cgcgccgccc tggcccgggc cgccctggcg ccgcggctgc cgcacaacct gagcttggag
420
ctggtggtcg ccgcgccccc cgcccgcgac cccgcctcgc tgacccgcgg cctgtgccag
480
gcgctggtgc ctccgggcgt ggcggccctg ctcgcctttc ccgaggctcg gcccgagctg
540
ctgcagctgc acttcctggc ggcggccacc gagacccccg tgctcagcct gctgcggcgg
600
gaggcgcgcg cgcccctcgg agccccgaac ccattccacc tgcagctgca ctgggccagc
660
cccctggaga cgctgctgga tgtgctggtg gcggtgctgc aggcgcacgc ctgggaagac
720
gtcggcctgg ccctgtgccg cactcaggac cccggcggcc tggtggccct ctggacaagc
780
cgggctggcc ggccccacac gctggtcctg gacctaagcc ggcgggacac gggagatgca
840
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900
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960
cccggcccccc actggctgtt ggggacacca ctgccgccca ggccctgcc caccgcgggg
1020
ctgccaccag ggctgctggc gctgggcgag gtggcacgac ccccgctgga ggccgccatc
1080
catgacattg tgcaactggt ggcccgggcg ctgggcagtg cggcccaggt gcagccgaag
1140
cgagccctcc tccccgcccc ggtcaactgc ggggacctgc agccggccgg gcccgagtcc
1200
ccggggcgct tcttggcacg gttcctggcc aacacgtcct tccagggccg cacgggcccc
1260
gtgtgggtga caggcagctc ccaggtacac atgtctcggc actttaaggt gtggagcctt
1320
```

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cgccgggacc cacggggcgc cccggcctgg gccacggtgg gcagctggcg gtacggccag
1380
ctggacttgg aaccgggagg tgcctctgca tggcccccgc ccccgcaggg tgcccaggtc
1440
cggcccaagc tgcgtgtggt aacgctgttg gaacacccat ttgtgtttgc ccgtgatcca
1500
gacgaagacg ggcagtgccc agcagggcag ctgtgcctgg accccggcac caacgactcg
1560
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1620
aagtgctgct acggctactg cattgacctg ctggagcggc tggcggagga cacgcccttc
1680
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1740
accggcctgg tcggggacct gctggccggc cgggcccaca tggcggtcac cagcttcagt
1800
atcaactccg cccgctcaca ggtggtggac ttcaccagcc ccttcttctc caccagcctg
1860
ggcatcatgg tgcgggcacg ggacacggcc tcacccatcg gtgcctttat gtggcccctg
1920
cactggtcca cgtggctggg cgtctttgcg gccctgcacc tcaccgcgct cttcctcacc
1980
gtgtacgagt ggcgtagccc ctacggcctc acgccacgtg gccgcaaccg cagcaccgtc
2040
ttctcctact cctcagccct caacctgtgc tacgccatcc tcttcagacg caccgtgtcc
2100
agcaagacgc ccaagtgccc cacgggccgc ctgctcatga acctctgggc catcttctgc
2160
ctgctggtgc tgtccagcta cacggccaac ctggctgccg tcatggtcgg ggacaagacc
2220
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2280
ttcggcaccg tgtgggagag cagcgccgag gcgtacatca agaagagctt ccccgacatg
2340
cacgcacaca tgcggcgcca cagcgcgccc accacgcccc gcggcgtcgc catgctcacg
2400
agcgacccc ccaagctcaa cgccttcatc atggacaagt cgctcctgga ctacgaggtc
2460
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2520
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2580
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2640
ggcaagcggg tctttgcggt tacagagacc ctgcagatga gcatctacca cttcgcgggc
2700
ctcttcgtgt tgctgtgcct gggcctgggc agcgctctgc tcagctcgct gggcgagcac
2760
gccttcttcc gcctggcgct gccgcgcatc cgcaaggga gcaggctgca gtactggctg
2820
cacaccagcc agaaaatcca ccgcgccctc aacacggagc caccagaggg gtcgaaggag
2880
gagacggcag aggcggagcc caggtaagtg gtggtcgggg cggaccacga tgcaggacca
2940
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cccagaccca ccaccccacc agctcgcccc gaagccggcc gcggggtgca ggaggttccc
3000
ggaggtcccc cgcccacccc cggacgtgca caccgtggct ccctggttgt gcctgtcggc
3060
catcctctgc cgtcagcggc ctctgcagag gcccagggcg cgagacggct gccccggcgg
3120
acactgacca ggccggttcc gtccccagcg gccccgaggt ggagcagcag cagcagcagc
3180
aggaccagcc aacggctccg gagggct
3207

<210> 4516
<211> 901
<212> PRT
<213> Homo sapiens

<400> 4516
Met Glu Phe Val Arg Ala Leu Trp Leu Gly Leu Ala Leu Ala Leu Gly
1   5   10   15
Pro Gly Ser Ala Gly Gly His Pro Gln Pro Cys Gly Val Leu Ala Arg
            20   25   30
Leu Gly Gly Ser Val Arg Leu Gly Ala Leu Leu Pro Arg Ala Pro Leu
            35   40   45
Ala Arg Ala Arg Ala Arg Ala Ala Leu Ala Arg Ala Ala Leu Ala Pro
        50   55   60
Arg Leu Pro His Asn Leu Ser Leu Glu Leu Val Val Ala Ala Pro Pro
65   70   75   80
Ala Arg Asp Pro Ala Ser Leu Thr Arg Gly Leu Cys Gln Ala Leu Val
            85   90   95
Pro Pro Gly Val Ala Ala Leu Leu Ala Phe Pro Glu Ala Arg Pro Glu
            100   105   110
Leu Leu Gln Leu His Phe Leu Ala Ala Ala Thr Glu Thr Pro Val Leu
        115   120   125
Ser Leu Leu Arg Arg Glu Ala Arg Ala Pro Leu Gly Ala Pro Asn Pro
        130   135   140
Phe His Leu Gln Leu His Trp Ala Ser Pro Leu Glu Thr Leu Leu Asp
145   150   155   160
Val Leu Val Ala Val Leu Gln Ala His Ala Trp Glu Asp Val Gly Leu
            165   170   175
Ala Leu Cys Arg Thr Gln Asp Pro Gly Gly Leu Val Ala Leu Trp Thr
            180   185   190
Ser Arg Ala Gly Arg Pro Pro Gln Leu Val Leu Asp Leu Ser Arg Arg
        195   200   205
Asp Thr Gly Asp Ala Gly Leu Arg Ala Arg Leu Ala Pro Met Ala Ala
        210   215   220
Pro Val Gly Gly Glu Ala Pro Val Pro Ala Ala Val Leu Leu Gly Cys
225   230   235   240
Asp Ile Ala Arg Ala Arg Arg Val Leu Glu Ala Val Pro Pro Gly Pro
            245   250   255
His Trp Leu Leu Gly Thr Pro Leu Pro Pro Lys Ala Leu Pro Thr Ala
            260   265   270
Gly Leu Pro Pro Gly Leu Leu Ala Leu Gly Glu Val Ala Arg Pro Pro
            275   280   285
Leu Glu Ala Ala Ile His Asp Ile Val Gln Leu Val Ala Arg Ala Leu

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         290                    295                    300
Gly Ser Ala Ala Gln Val Gln Pro Lys Arg Ala Leu Leu Pro Ala Pro
305                    310                    315                    320
Val Asn Cys Gly Asp Leu Gln Pro Ala Gly Pro Glu Ser Pro Gly Arg
                325                    330                    335
Phe Leu Ala Arg Phe Leu Ala Asn Thr Ser Phe Gln Gly Arg Thr Gly
            340                    345                    350
Pro Val Trp Val Thr Gly Ser Ser Gln Val His Met Ser Arg His Phe
            355                    360                    365
Lys Val Trp Ser Leu Arg Arg Asp Pro Arg Gly Ala Pro Ala Trp Ala
    370                    375                    380
Thr Val Gly Ser Trp Arg Tyr Gly Gln Leu Asp Leu Glu Pro Gly Gly
385                    390                    395                    400
Ala Ser Ala Trp Pro Pro Pro Gln Gly Ala Gln Val Arg Pro Lys
                405                    410                    415
Leu Arg Val Val Thr Leu Leu Glu His Pro Phe Val Phe Ala Arg Asp
                420                    425                    430
Pro Asp Glu Asp Gly Gln Cys Pro Ala Gly Gln Leu Cys Leu Asp Pro
            435                    440                    445
Gly Thr Asn Asp Ser Ala Thr Leu Asp Ala Leu Phe Ala Ala Leu Ala
            450                    455                    460
Asn Gly Ser Ala Pro Arg Ala Leu Arg Lys Cys Cys Tyr Gly Tyr Cys
465                    470                    475                    480
Ile Asp Leu Leu Glu Arg Leu Ala Glu Asp Thr Pro Phe Asp Phe Glu
                485                    490                    495
Leu Tyr Leu Val Gly Asp Gly Lys Tyr Gly Ala Leu Arg Asp Gly Arg
            500                    505                    510
Trp Thr Gly Leu Val Gly Asp Leu Leu Ala Gly Arg Ala His Met Ala
            515                    520                    525
Val Thr Ser Phe Ser Ile Asn Ser Ala Arg Ser Gln Val Val Asp Phe
            530                    535                    540
Thr Ser Pro Phe Phe Ser Thr Ser Leu Gly Ile Met Val Arg Ala Arg
545                    550                    555                    560
Asp Thr Ala Ser Pro Ile Gly Ala Phe Met Trp Pro Leu His Trp Ser
                565                    570                    575
Thr Trp Leu Gly Val Phe Ala Ala Leu His Leu Thr Ala Leu Phe Leu
            580                    585                    590
Thr Val Tyr Glu Trp Arg Ser Pro Tyr Gly Leu Thr Pro Arg Gly Arg
            595                    600                    605
Asn Arg Ser Thr Val Phe Ser Tyr Ser Ser Ala Leu Asn Leu Cys Tyr
    610                    615                    620
Ala Ile Leu Phe Arg Arg Thr Val Ser Ser Lys Thr Pro Lys Cys Pro
625                    630                    635                    640
Thr Gly Arg Leu Leu Met Asn Leu Trp Ala Ile Phe Cys Leu Leu Val
                645                    650                    655
Leu Ser Ser Tyr Thr Ala Asn Leu Ala Ala Val Met Val Gly Asp Lys
                660                    665                    670
Thr Phe Glu Glu Leu Ser Gly Ile His Asp Pro Lys Leu His His Pro
            675                    680                    685
Ala Gln Gly Phe Arg Phe Gly Thr Val Trp Glu Ser Ser Ala Glu Ala
    690                    695                    700
Tyr Ile Lys Lys Ser Phe Pro Asp Met His Ala His Met Arg Arg His
705                    710                    715                    720
Ser Ala Pro Thr Thr Pro Arg Gly Val Ala Met Leu Thr Ser Asp Pro
```

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                    725               730               735
Pro Lys Leu Asn Ala Phe Ile Met Asp Lys Ser Leu Leu Asp Tyr Glu
            740               745               750
Val Ser Ile Asp Ala Asp Cys Lys Leu Leu Thr Val Gly Lys Pro Phe
            755               760               765
Ala Ile Glu Gly Tyr Gly Ile Gly Leu Pro Gln Asn Ser Pro Leu Thr
            770               775               780
Ser Asn Leu Ser Glu Phe Ile Ser Arg Tyr Lys Ser Ser Gly Phe Ile
        785               790               795               800
Asp Leu Leu His Asp Lys Trp Tyr Lys Met Val Pro Cys Gly Lys Arg
                805               810               815
Val Phe Ala Val Thr Glu Thr Leu Gln Met Ser Ile Tyr His Phe Ala
            820               825               830
Gly Leu Phe Val Leu Leu Cys Leu Gly Leu Gly Ser Ala Leu Leu Ser
            835               840               845
Ser Leu Gly Glu His Ala Phe Phe Arg Leu Ala Leu Pro Arg Ile Arg
        850               855               860
Lys Gly Ser Arg Leu Gln Tyr Trp Leu His Thr Ser Gln Lys Ile His
    865               870               875               880
Arg Ala Leu Asn Thr Glu Pro Pro Glu Gly Ser Lys Glu Glu Thr Ala
                885               890               895
Glu Ala Glu Pro Arg
                900
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<210> 4517
<211> 2275
<212> DNA
<213> Homo sapiens

<400> 4517
actagttcta gatcgcgagc ggagctgctg actgcattct tctctgccac tgcggatgct
60
gcctccccgt ttccagcctg taagcccgtt gtggtggtga gctccctgct gctgcaggag
120
gaggagcccc tggctggggg gaagccgggt gcggacggtg gcagcctgga ggccgtgcgg
180
ctggggccct cgtcaggcct cctagtggac tggctggaaa tgctggaccc cgaggtggtc
240
agcagctgcc ccgacctgca gctcaggctg ctcttctccc ggaggaaggg caaaggtcag
300
gcccaggtgc cctcgttccg tccctacctc ctgaccctct tcacgcatca gtccagctgg
360
cccacactgc accagtgcat ccgagtcctg ctgggcaaga gccgggaaca gaggttcgac
420
ccctctgcct ctctggactt cctctgggcc tgcatccatg ttcctcgcat ctggcagggg
480
cgggaccagc gcaccccgca gaagcggcgg gaggagctgg tgctgcgggt ccagggcccg
540
gagctcatca gcctggtgga gctgatcctg ccgaggcgg agacgcggag ccaggacggg
600
gacacagccg cctgcagcct catccaggcc cggctgcccc tgctgctcag ctgctgctgt
660
ggggacgatg agagtgtcag gaaggtgacg gagcacctgt caggctgcat ccagcagtgg
720
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ggagacagcg tgctgggcag gcgctgccga gaccttctcc tgcagctcta cctacagcgg
780
ccggagctgc gggtgcccgt gcctgaggtc ctactgcaca gcgaaggggc tgccagcagc
840
agcgtctgca agctggacgg actcatccac cgcttcatca cgctccttgc ggacaccagc
900
gactcccggg cgttggagaa ccgaggggcg gatgccagca tggcctgccg gaagctggcg
960
gtggcgcacc cgctgctgct gctcaggcac ctgcccatga tcgcggcgct cctgcacggc
1020
cgcacccacc tcaacttcca ggagttccgg cagcagaacc acctgagctg cttcctgcac
1080
gtgctgggcc tgctggagct gctgcagccg cacgtgttcc gcagcgagca ccaggggggcg
1140
ctgtgggact gccttctgtc cttcatccgc ctgctgctga attacaggaa gtcctcccgc
1200
catctggctg ccttcatcaa caagtttgtg cagttcatcc ataagtacat tacctacaat
1260
gccccagcag ccatctcctt cctgcagaag cacgccgacc cgctccacga cctgtccttc
1320
gacaacagtg acctggtgat gctgaaatcc ctccttgcag ggctcagcct gcccagcagg
1380
gacgacagga ccgaccgagg cctggacgaa gagggcgagg aggagagctc agccggctcc
1440
ttgcccctgg tcagcgtctc cctgttcacc cctctgaccg cggccgagat ggccccctac
1500
atgaaacggc tttcccgggg ccaaacggtg gagggtgagt caggccctgc ttcacccacg
1560
ccagatctgc tggaggttct gagtgacata gacgagatgt cccggcggag acccgagatc
1620
ctgagcttct tctcgaccaa cctgcagcgg ctgatgagct cggccgagga gtgttgccgc
1680
aacctcgcct tcagcctggc cctgcgctcc atgcagaaca gccccagcat tgcagccgct
1740
ttcctgccca cgttcatgta ctgcctgggc agccaggact ttgaggtggt gcagacggcc
1800
ctccggaacc tgcctgagta cgctctcctg tgccaagagc acgcggctgt gctgctccac
1860
cgggccttcc tggtgggcat gtacggccag atggaccccca gcgcgcagat ctccgaggcc
1920
ctgaggatcc tgcatatgga ggccgtgatg tgagcctgtg gcagccgacc cccctccaag
1980
ccccggcccg tcccgtcccc ggggatcctc gaggcaaagc ccaggaagcg tgggcgttgc
2040
tggtctgtcc gaggaggtga gggcgccgag ccctgaggcc aggcaggccc aggagcaata
2100
ctccgagccc tggggtggct ccgggccggc cgctggcatc aggggccgtc cagcaagccc
2160
tcattcacct tctgggccac agccctgccg cggagcggcg gatcccccg ggcatggcct
2220
gggctggttt tgaatgaaac gacctgaact gtcaaaaaaa aaaaaaaaaa aaaaa
2275

<210> 4518

<211> 650
<212> PRT
<213> Homo sapiens

<400> 4518
Thr Ser Ser Arg Ser Arg Ala Glu Leu Leu Thr Ala Phe Phe Ser Ala
1   5   10   15
Thr Ala Asp Ala Ala Ser Pro Phe Pro Ala Cys Lys Pro Val Val Val
            20   25   30
Val Ser Ser Leu Leu Leu Gln Glu Glu Glu Pro Leu Ala Gly Gly Lys
            35   40   45
Pro Gly Ala Asp Gly Gly Ser Leu Glu Ala Val Arg Leu Gly Pro Ser
        50   55   60
Ser Gly Leu Leu Val Asp Trp Leu Glu Met Leu Asp Pro Glu Val Val
65   70   75   80
Ser Ser Cys Pro Asp Leu Gln Leu Arg Leu Leu Phe Ser Arg Arg Lys
                85   90   95
Gly Lys Gly Gln Ala Gln Val Pro Ser Phe Arg Pro Tyr Leu Leu Thr
                100   105   110
Leu Phe Thr His Gln Ser Ser Trp Pro Thr Leu His Gln Cys Ile Arg
            115   120   125
Val Leu Leu Gly Lys Ser Arg Glu Gln Arg Phe Asp Pro Ser Ala Ser
    130   135   140
Leu Asp Phe Leu Trp Ala Cys Ile His Val Pro Arg Ile Trp Gln Gly
145   150   155   160
Arg Asp Gln Arg Thr Pro Gln Lys Arg Arg Glu Glu Leu Val Leu Arg
                165   170   175
Val Gln Gly Pro Glu Leu Ile Ser Leu Val Glu Leu Ile Leu Ala Glu
            180   185   190
Ala Glu Thr Arg Ser Gln Asp Gly Asp Thr Ala Ala Cys Ser Leu Ile
            195   200   205
Gln Ala Arg Leu Pro Leu Leu Leu Ser Cys Cys Cys Gly Asp Asp Glu
    210   215   220
Ser Val Arg Lys Val Thr Glu His Leu Ser Gly Cys Ile Gln Gln Trp
225   230   235   240
Gly Asp Ser Val Leu Gly Arg Arg Cys Arg Asp Leu Leu Leu Gln Leu
                245   250   255
Tyr Leu Gln Arg Pro Glu Leu Arg Val Pro Val Pro Glu Val Leu Leu
                260   265   270
His Ser Glu Gly Ala Ala Ser Ser Ser Val Cys Lys Leu Asp Gly Leu
            275   280   285
Ile His Arg Phe Ile Thr Leu Leu Ala Asp Thr Ser Asp Ser Arg Ala
    290   295   300
Leu Glu Asn Arg Gly Ala Asp Ala Ser Met Ala Cys Arg Lys Leu Ala
305   310   315   320
Val Ala His Pro Leu Leu Leu Leu Arg His Leu Pro Met Ile Ala Ala
                325   330   335
Leu Leu His Gly Arg Thr His Leu Asn Phe Gln Glu Phe Arg Gln Gln
                340   345   350
Asn His Leu Ser Cys Phe Leu His Val Leu Gly Leu Leu Glu Leu Leu
            355   360   365
Gln Pro His Val Phe Arg Ser Glu His Gln Gly Ala Leu Trp Asp Cys
    370   375   380
Leu Leu Ser Phe Ile Arg Leu Leu Leu Asn Tyr Arg Lys Ser Ser Arg

```
385                    390                    395                    400
His Leu Ala Ala Phe Ile Asn Lys Phe Val Gln Phe Ile His Lys Tyr
                    405                    410                    415
Ile Thr Tyr Asn Ala Pro Ala Ala Ile Ser Phe Leu Gln Lys His Ala
                    420                    425                    430
Asp Pro Leu His Asp Leu Ser Phe Asp Asn Ser Asp Leu Val Met Leu
                    435                    440                    445
Lys Ser Leu Leu Ala Gly Leu Ser Leu Pro Ser Arg Asp Asp Arg Thr
            450                    455                    460
Asp Arg Gly Leu Asp Glu Glu Gly Glu Glu Glu Ser Ser Ala Gly Ser
465                    470                    475                    480
Leu Pro Leu Val Ser Val Ser Leu Phe Thr Pro Leu Thr Ala Ala Glu
                    485                    490                    495
Met Ala Pro Tyr Met Lys Arg Leu Ser Arg Gly Gln Thr Val Glu Gly
                    500                    505                    510
Glu Ser Gly Pro Ala Ser Pro Thr Pro Asp Leu Leu Glu Val Leu Ser
                    515                    520                    525
Asp Ile Asp Glu Met Ser Arg Arg Arg Pro Glu Ile Leu Ser Phe Phe
            530                    535                    540
Ser Thr Asn Leu Gln Arg Leu Met Ser Ser Ala Glu Glu Cys Cys Arg
545                    550                    555                    560
Asn Leu Ala Phe Ser Leu Ala Leu Arg Ser Met Gln Asn Ser Pro Ser
                    565                    570                    575
Ile Ala Ala Ala Phe Leu Pro Thr Phe Met Tyr Cys Leu Gly Ser Gln
                    580                    585                    590
Asp Phe Glu Val Val Gln Thr Ala Leu Arg Asn Leu Pro Glu Tyr Ala
            595                    600                    605
Leu Leu Cys Gln Glu His Ala Ala Val Leu Leu His Arg Ala Phe Leu
            610                    615                    620
Val Gly Met Tyr Gly Gln Met Asp Pro Ser Ala Gln Ile Ser Glu Ala
625                    630                    635                    640
Leu Arg Ile Leu His Met Glu Ala Val Met
            645                    650
```

<210> 4519
<211> 2326
<212> DNA
<213> Homo sapiens

<400> 4519

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gacagagtgc agcctttttcc tcccctaata gaaaagccat tgccctcttt tcctcccta
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atagaaaagc cattgccctc ttttcctcca cccttaagaa gacctgcatc tgttggacca
120
acagacaact atccggctta cggccagggg agccctgca gctgcacaga accagtttct
180
tatgtatctg gcggtaattg ggaaagcttc tgagaaagtc catggggccg atgtatggga
240
gatgaatgtg gtcccggagg catccaaacg agggctgtgt ggtgtgctca tgtggaggga
300
tggactacac tgcatactaa ctgtaagcag gccgagagac ccaataacca gcagaattgt
360
ttcaaagttt gcgattggca caaagagttg tacgactgga gactgggacc ttggaatcag
420
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tgtcagcccg tgatttcaaa aagcctagag aaacctcttg agtgcattaa gggggaagaa
480
ggtattcagg tgagggagat agcgtgcatc cagaaagaca aagacattcc tgcggaggat
540
atcatctgtg agtactttga gcccaagcct ctcctggagc aggcttgcct cattccttgc
600
cagcaagatt gcatcgtgtc tgaattttct gcctggtccg aatgctccaa gacctgcggc
660
agcgggctcc agcaccggac gcgtcatgtg gtggcgcccc cgcagttcgg aggctctggc
720
tgtccaaacc tgacggagtt ccaggtgtgc caatccagtc catgcgaggc cgaggagctc
780
aggtacagcc tgcatgtggg gccctggagc acctgctcaa tgccccactc ccgacaagta
840
agacaagcaa ggagacgcgg gaagaataaa gaacgggaaa aggaccgcag caaaggagta
900
aaggatccag aagcccgcga gcttattaag aaaaagagaa acagaaacag gcagaacaga
960
caagagaaca aatattggga catccagatt ggatatcaga ccagagaggt tatgtgcatt
1020
aacaagacgg ggaaagctgc tgatttaagc ttttgccagc aagagaagct tccaatgacc
1080
ttccagtcct gtgtgatcac caaagagtgc caggtttccg agtggtcaga gtggagcccc
1140
tgctcaaaaa catgccatga catggtgtcc cctgcaggca ctcgtgtaag gacacgaacc
1200
atcaggcagt ttcccattgg cagtgaaaag gagtgtccag aatttgaaga aaaagaaccc
1260
tgtttgtctc aaggagatgg agttgtcccc tgtgccacgt atggctggag aactacagag
1320
tggactgagt gccgtgtgga cccctttgctc agtcagcagg acaagaggcg cggcaaccag
1380
acggccctct gtggagggggg catccagacc cgagaggtgt actgcgtgca ggccaacgaa
1440
aacctcctct cacaattaag tacccacaag aacaaagaag cctcaaagcc aatggactta
1500
aaattatgca ctggacctat ccctaatact acacagctgt gccacattcc ttgtccaact
1560
gaatgtgaag tttcaccttg gtcagcttgg ggaccttgta cttatgaaaa ctgtaatgat
1620
ccgcaaggga aaaaaggctt caaactgagg aagcggcgca ttaccaatga gcccactgga
1680
ggctctgggt taaccggaaa ctgccctcac ttactggaag ccattccctg tgaagagcct
1740
gcctgttatg actggaaagc ggtgagactg ggagactgcg agccagataa cggaaaggag
1800
tgtggtccag gcacgcaagt tcaagaggtt gtgtgcatca acagtgatgg agaagaagtt
1860
gacagacagc tgtgcagaga tgccatcttc cccatccctg tggcctgtga tgccccatgc
1920
ccgaaagact gtgtgctcag cacatggtct acgtggtcct cctgctcaca cacctgctca
1980
gggaaaacga cagaagggaa acagatacga gcacgatcca ttctggccta tgcgggtgaa
2040
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gaaggtgagt cgccagcttc agacgccatc taggttcgtt tcaaaagtta gtgtgcatct
2100
tttttgtgta gcctggaaaa gatgatattc tatgaaagtc aacaaccaga aattcagcca
2160
tccaagattt aatatctgtt gatgtgttga gcaatttgat tctgtccccc aaaattaatc
2220
ttgaaaatgg atctctaaca aaggagaaag acttttttaaa agtgaactca ttttgctttt
2280
tcctaccacc ttaatatata tttaactctt tgctccaaaa aaaaaa
2326

<210> 4520
<211> 617
<212> PRT
<213> Homo sapiens

<400> 4520
Pro Trp Gly Arg Cys Met Gly Asp Glu Cys Gly Pro Gly Gly Ile Gln
1   5   10   15
Thr Arg Ala Val Trp Cys Ala His Val Glu Gly Trp Thr Thr Leu His
            20   25   30
Thr Asn Cys Lys Gln Ala Glu Arg Pro Asn Asn Gln Gln Asn Cys Phe
        35   40   45
Lys Val Cys Asp Trp His Lys Glu Leu Tyr Asp Trp Arg Leu Gly Pro
    50   55   60
Trp Asn Gln Cys Gln Pro Val Ile Ser Lys Ser Leu Glu Lys Pro Leu
65   70   75   80
Glu Cys Ile Lys Gly Glu Glu Gly Ile Gln Val Arg Glu Ile Ala Cys
                85   90   95
Ile Gln Lys Asp Lys Asp Ile Pro Ala Glu Asp Ile Ile Cys Glu Tyr
            100   105   110
Phe Glu Pro Lys Pro Leu Leu Glu Gln Ala Cys Leu Ile Pro Cys Gln
        115   120   125
Gln Asp Cys Ile Val Ser Glu Phe Ser Ala Trp Ser Glu Cys Ser Lys
    130   135   140
Thr Cys Gly Ser Gly Leu Gln His Arg Thr Arg His Val Val Ala Pro
145   150   155   160
Pro Gln Phe Gly Gly Ser Gly Cys Pro Asn Leu Thr Glu Phe Gln Val
                165   170   175
Cys Gln Ser Ser Pro Cys Glu Ala Glu Glu Leu Arg Tyr Ser Leu His
            180   185   190
Val Gly Pro Trp Ser Thr Cys Ser Met Pro His Ser Arg Gln Val Arg
            195   200   205
Gln Ala Arg Arg Arg Gly Lys Asn Lys Glu Arg Glu Lys Asp Arg Ser
    210   215   220
Lys Gly Val Lys Asp Pro Glu Ala Arg Glu Leu Ile Lys Lys Lys Arg
225   230   235   240
Asn Arg Asn Arg Gln Asn Arg Gln Glu Asn Lys Tyr Trp Asp Ile Gln
                245   250   255
Ile Gly Tyr Gln Thr Arg Glu Val Met Cys Ile Asn Lys Thr Gly Lys
            260   265   270
Ala Ala Asp Leu Ser Phe Cys Gln Gln Glu Lys Leu Pro Met Thr Phe
        275   280   285
Gln Ser Cys Val Ile Thr Lys Glu Cys Gln Val Ser Glu Trp Ser Glu

```
            290                    295                    300
Trp Ser Pro Cys Ser Lys Thr Cys His Asp Met Val Ser Pro Ala Gly
305                    310                    315                    320
Thr Arg Val Arg Thr Arg Thr Ile Arg Gln Phe Pro Ile Gly Ser Glu
                325                    330                    335
Lys Glu Cys Pro Glu Phe Glu Glu Lys Glu Pro Cys Leu Ser Gln Gly
                340                    345                    350
Asp Gly Val Val Pro Cys Ala Thr Tyr Gly Trp Arg Thr Thr Glu Trp
                355                    360                    365
Thr Glu Cys Arg Val Asp Pro Leu Leu Ser Gln Gln Asp Lys Arg Arg
    370                    375                    380
Gly Asn Gln Thr Ala Leu Cys Gly Gly Gly Ile Gln Thr Arg Glu Val
385                    390                    395                    400
Tyr Cys Val Gln Ala Asn Glu Asn Leu Leu Ser Gln Leu Ser Thr His
                405                    410                    415
Lys Asn Lys Glu Ala Ser Lys Pro Met Asp Leu Lys Leu Cys Thr Gly
                420                    425                    430
Pro Ile Pro Asn Thr Thr Gln Leu Cys His Ile Pro Cys Pro Thr Glu
                435                    440                    445
Cys Glu Val Ser Pro Trp Ser Ala Trp Gly Pro Cys Thr Tyr Glu Asn
    450                    455                    460
Cys Asn Asp Pro Gln Gly Lys Lys Gly Phe Lys Leu Arg Lys Arg Arg
465                    470                    475                    480
Ile Thr Asn Glu Pro Thr Gly Gly Ser Gly Leu Thr Gly Asn Cys Pro
                485                    490                    495
His Leu Leu Glu Ala Ile Pro Cys Glu Glu Pro Ala Cys Tyr Asp Trp
                500                    505                    510
Lys Ala Val Arg Leu Gly Asp Cys Glu Pro Asp Asn Gly Lys Glu Cys
    515                    520                    525
Gly Pro Gly Thr Gln Val Gln Glu Val Val Cys Ile Asn Ser Asp Gly
    530                    535                    540
Glu Glu Val Asp Arg Gln Leu Cys Arg Asp Ala Ile Phe Pro Ile Pro
545                    550                    555                    560
Val Ala Cys Asp Ala Pro Cys Pro Lys Asp Cys Val Leu Ser Thr Trp
                565                    570                    575
Ser Thr Trp Ser Ser Cys Ser His Thr Cys Ser Gly Lys Thr Thr Glu
                580                    585                    590
Gly Lys Gln Ile Arg Ala Arg Ser Ile Leu Ala Tyr Ala Gly Glu Glu
    595                    600                    605
Gly Glu Ser Pro Ala Ser Asp Ala Ile
    610                    615
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<210> 4521
<211> 1071
<212> DNA
<213> Homo sapiens

<400> 4521
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tcagaagaaa tgaaataatg ccttcaaacg actgaggaaa aataattatt aacctataat
120
ttataccaat ataaacaatt actcaggaaa aaaagaaaat aaaaacttgc aagggctaaa
180

```
ataacttgct taccaccaaa gatgcttgct ctaagaactg tgaagggatt caagaggaaa
240
agtacaccca gagagggctc atacatgtcc tctcccccctc ctcctccacc accaggacac
300
acagaaactg cctcctcttt tcagccctct cccttctcag ctgactttga gctacaaata
360
tcccttctct acttggagag ccccatttca ttacaggaat ttgctttgag ttttattatc
420
attttagtct atgtcttaga ttgggctgct ataacaaggt gccataggct gagcggctta
480
aacaacaaac actcatatcc cacagttaca gaggctgaga agcctggggt caaggtacca
540
gcatggtctg attctgttct ggaggctggg aaatccaaga tggaagcact ggtaggtttg
600
gtgtctggga gggcttctct ctgcttccaa gatggtgcct tgtcgctgca tcttccagag
660
ggaaggaatg ctgtgtcctt gcagcacaga agaaacacat ctgaaaagaa atcaagcaga
720
aaagttgaaa ataaagagat ggaatatata tatgaaaact actacatata ggaagggatg
780
tagcaaagac acagagagaa tataatttaa ggcaaaaagc ttcaatagga tttcaaagca
840
aaccttgcat actaaaaaaa ggaaaccaaa aataaaccaa aagaaaccga aaaccatgaa
900
cttgcaggag aattttccaa agccgtaatt ataatgagag tgtttttaag tctataagaa
960
attaatatat caaacaaata aagattaata agaatttgga atttgtatga aatggcaaag
1020
gaaaagccag gcgtggtggc ttacgcctgt aatgccagca ctttgggagg c
1071
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<210> 4522
<211> 189
<212> PRT
<213> Homo sapiens
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<400> 4522
Met Leu Ala Leu Arg Thr Val Lys Gly Phe Lys Arg Lys Ser Thr Pro
1               5                   10                  15
Arg Glu Gly Ser Tyr Met Ser Ser Pro Pro Pro Pro Pro Pro Pro Gly
            20                  25                  30
His Thr Glu Thr Ala Ser Ser Phe Gln Pro Ser Pro Phe Ser Ala Asp
            35                  40                  45
Phe Glu Leu Gln Ile Ser Leu Leu Tyr Leu Glu Ser Pro Ile Ser Leu
    50                  55                  60
Gln Glu Phe Ala Leu Ser Phe Ile Ile Ile Leu Val Tyr Val Leu Asp
65                  70                  75                  80
Trp Ala Ala Ile Thr Arg Cys His Arg Leu Ser Gly Leu Asn Asn Lys
                85                  90                  95
His Ser Tyr Pro Thr Val Thr Glu Ala Glu Lys Pro Gly Val Lys Val
                100                 105                 110
Pro Ala Trp Ser Asp Ser Val Leu Glu Ala Gly Lys Ser Lys Met Glu
            115                 120                 125
Ala Leu Val Gly Leu Val Ser Gly Arg Ala Ser Leu Cys Phe Gln Asp
```

```
       130                   135                   140
Gly Ala Leu Ser Leu His Leu Pro Glu Gly Arg Asn Ala Val Ser Leu
145                   150                   155                   160
Gln His Arg Arg Asn Thr Ser Glu Lys Lys Ser Ser Arg Lys Val Glu
                  165                   170                   175
Asn Lys Glu Met Glu Tyr Ile Tyr Glu Asn Tyr Tyr Ile
                  180                   185
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<210> 4523
<211> 1022
<212> DNA
<213> Homo sapiens

<400> 4523
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60
gacactccca ggctgagtct cntcttggtg attctgggcg tcatcttcat gaatggcaac
120
cgtgccagcg aggctgtcct ctgggaggca ctacgcaaga tgggactgcg ccctggggtg
180
aggcacccat tcctcggcga tctgaggaag ctcatcacag atgactttgt gaagcagaag
240
tacctggaat acaagaagat ccccaacagc aacccacctg agtatgaatt cctctggggc
300
ctgcgagccc gccatgagac cagcaagatg agggtcctga gattcatcgc ccagaatcag
360
aaccgagacc cccgggaatg gaaggctcat ttcttggagg ctgtggatga tgctttcaag
420
acaatggatg tggatatggc cgaggaacat gccagggccc agatgagggc ccagatgaat
480
atcggggatg aagcgctgat tggacggtgg agctgggatg acatacaagt cgagctcctg
540
acctgggatg aggacggaga ttttggcgat gcctgggcca ggatcccctt tgctttctgg
600
gccagatacc atcagtacat tctgaatagc aaccgtgcca acaggagggc cacgtggaga
660
gctggcgtca gcagtggcac caatggaggg gccagcacca gcgtcctaga tggccccagc
720
accagctcca ccatccggac cagaaatgct gccagagctg cgccagctt cttctcctgg
780
atccagtagg agtttcggca ccgttgacga actgcagcga tcttactggc caagccagag
840
cgcctcctct cagattcctt ctcgacacag caccctaggc ggcttcttcc tgtcagtcgg
900
aggtggcatg caagatgaag ctctctttgc tcttcctgct ttcattttgt gctttttcctt
960
gtgttttcat gttttgggta tcagtgttac attaaagttg caaaattaaa aaaaaaaaaa
1020
aa
1022

<210> 4524
<211> 262
<212> PRT

<213> Homo sapiens

<400> 4524
Ala Leu Tyr Ile Leu Val Cys Thr Arg Asp Ser Ser Ala Arg Leu Leu
 1   5   10   15
Gly Lys Thr Lys Asp Thr Pro Arg Leu Ser Leu Xaa Leu Val Ile Leu
            20   25   30
Gly Val Ile Phe Met Asn Gly Asn Arg Ala Ser Glu Ala Val Leu Trp
            35   40   45
Glu Ala Leu Arg Lys Met Gly Leu Arg Pro Gly Val Arg His Pro Phe
    50   55   60
Leu Gly Asp Leu Arg Lys Leu Ile Thr Asp Asp Phe Val Lys Gln Lys
65   70   75   80
Tyr Leu Glu Tyr Lys Lys Ile Pro Asn Ser Asn Pro Pro Glu Tyr Glu
                85   90   95
Phe Leu Trp Gly Leu Arg Ala Arg His Glu Thr Ser Lys Met Arg Val
            100   105   110
Leu Arg Phe Ile Ala Gln Asn Gln Asn Arg Asp Pro Arg Glu Trp Lys
            115   120   125
Ala His Phe Leu Glu Ala Val Asp Asp Ala Phe Lys Thr Met Asp Val
            130   135   140
Asp Met Ala Glu Glu His Ala Arg Ala Gln Met Arg Ala Gln Met Asn
145   150   155   160
Ile Gly Asp Glu Ala Leu Ile Gly Arg Trp Ser Trp Asp Asp Ile Gln
                165   170   175
Val Glu Leu Leu Thr Trp Asp Glu Asp Gly Asp Phe Gly Asp Ala Trp
                180   185   190
Ala Arg Ile Pro Phe Ala Phe Trp Ala Arg Tyr His Gln Tyr Ile Leu
            195   200   205
Asn Ser Asn Arg Ala Asn Arg Arg Ala Thr Trp Arg Ala Gly Val Ser
    210   215   220
Ser Gly Thr Asn Gly Gly Ala Ser Thr Ser Val Leu Asp Gly Pro Ser
225   230   235   240
Thr Ser Ser Thr Ile Arg Thr Arg Asn Ala Ala Arg Ala Gly Ala Ser
                245   250   255
Phe Phe Ser Trp Ile Gln
                260

<210> 4525
<211> 1731
<212> DNA
<213> Homo sapiens

<400> 4525
nngaaccatg gcattctcca ggctctgacc acagaagctt atgaatggga gccacgtgtt
60
gtgagtacag aggtggtcag agcccaagaa gaatgggaag ctgtggacac catccagcca
120
gagacaggga gccaagctag ctcagagcag cctgggcagc taatctcctt cagtgaggcc
180
ctgcagcact tccagactgt ggacctttcc cccttcaaga aagaatcca gccaactatt
240
cgaaggactg ggctcgccgc cctccgacac tacctcttcg ggcctccaaa gctccaccag
300

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cgccttcggg aagaaaggga cttggtcctg accattgctc agtgtggcct ggatagccaa
360
gacccagtgc atggccgagt cctccagacc atctataaga agctgaccgg ctccaagttt
420
gactgtgccc ttcatggaaa ccactgggag gacctgggct ttcagggagc gaatccagcc
480
acagacctga gaggcgcagg cttccttgcc ctcctgcatc tgctctacct agtgatggac
540
tcaaagacct tgccgatggc gcaggagatt ttccgcctgt ctcgtcacca catccagcaa
600
ttccctttct gtttgatgtc cgtgaacatc acccacattg ccatccaggc cttgagagag
660
gagtgtctct ccagagagtg taatcggcag cagaaggtca tccccgtggt gaacagcttc
720
tatgccgcca cattcctcca cctcgcacat gtctggagga cacagcggaa gaccatctca
780
gactcgggct ttgtcctcaa aggtgtgctc tttcttctgg ggaggcctag gctgaatgca
840
cagtgtccca ggtccagaga gcccaaggtg gttgctagac tggtttttggc tgcagttctt
900
ccccatccac actttctcaa attccagctt accaaaatct ccatcaccca ccccctggag
960
tctgctagtt ctcctttctc tgccctgact gtcgcccttt tctggtctta tacttatgac
1020
aagcatatat tctgatcaaa aattgggagc cagggtccaa tagttggact attcaaagtt
1080
gcaattgtgc agacaaggta gagtgtgtgg tccctgtggc tgtagctggc tccctagcct
1140
acctctctgg tgatctctcc atctgaggct ccttcacttt ctctccatgg gataggggtt
1200
gggggtactc cctagagctg ctaggcttga ggccttgact gttgtgtcac ccagagcccc
1260
ctcaagcctt ctgctcccca attctctctg ttgcagagtt ggaagtattg gccaagaaga
1320
gcccacggcg ggctgctcaa gaccctggag ctgtacttgg ccagggtgtc aaagggacag
1380
gcctccttgt tgggagcaca gaagtgctat gggccagaag cccctccctt caaggatctc
1440
accttcacag gtgagagtga cctgcagtct cactcatccg aaggcgtatg gctgatctga
1500
cctccgagat gaatggaggc ttaaaggctg agctgcaggg gctttcaggg ggtcagtgga
1560
gccatgtcag gagcctggcc aggccgcacc ccttgctgtc tcagcagatg ggatatagga
1620
agctcctggg cttagctgtg ggaagccaag taccctcacc ggcatgggac atgaggggca
1680
gctagacttc acccccttcc cgcagacctg cctccagagc aaggagaatt c
1731

<210> 4526
<211> 344
<212> PRT
<213> Homo sapiens
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<400> 4526
Xaa Asn His Gly Ile Leu Gln Ala Leu Thr Thr Glu Ala Tyr Glu Trp
 1   5   10   15
Glu Pro Arg Val Val Ser Thr Glu Val Val Arg Ala Gln Glu Glu Trp
            20   25   30
Glu Ala Val Asp Thr Ile Gln Pro Glu Thr Gly Ser Gln Ala Ser Ser
        35   40   45
Glu Gln Pro Gly Gln Leu Ile Ser Phe Ser Glu Ala Leu Gln His Phe
    50   55   60
Gln Thr Val Asp Leu Ser Pro Phe Lys Lys Arg Ile Gln Pro Thr Ile
65   70   75   80
Arg Arg Thr Gly Leu Ala Ala Leu Arg His Tyr Leu Phe Gly Pro Pro
                85   90   95
Lys Leu His Gln Arg Leu Arg Glu Glu Arg Asp Leu Val Leu Thr Ile
            100   105   110
Ala Gln Cys Gly Leu Asp Ser Gln Asp Pro Val His Gly Arg Val Leu
        115   120   125
Gln Thr Ile Tyr Lys Lys Leu Thr Gly Ser Lys Phe Asp Cys Ala Leu
    130   135   140
His Gly Asn His Trp Glu Asp Leu Gly Phe Gln Gly Ala Asn Pro Ala
145   150   155   160
Thr Asp Leu Arg Gly Ala Gly Phe Leu Ala Leu Leu His Leu Leu Tyr
                165   170   175
Leu Val Met Asp Ser Lys Thr Leu Pro Met Ala Gln Glu Ile Phe Arg
                180   185   190
Leu Ser Arg His His Ile Gln Gln Phe Pro Phe Cys Leu Met Ser Val
        195   200   205
Asn Ile Thr His Ile Ala Ile Gln Ala Leu Arg Glu Glu Cys Leu Ser
    210   215   220
Arg Glu Cys Asn Arg Gln Gln Lys Val Ile Pro Val Val Asn Ser Phe
225   230   235   240
Tyr Ala Ala Thr Phe Leu His Leu Ala His Val Trp Arg Thr Gln Arg
                245   250   255
Lys Thr Ile Ser Asp Ser Gly Phe Val Leu Lys Gly Val Leu Phe Leu
            260   265   270
Leu Gly Arg Pro Arg Leu Asn Ala Gln Cys Pro Arg Ser Arg Glu Pro
            275   280   285
Lys Val Val Ala Arg Leu Val Leu Ala Ala Val Leu Pro His Pro His
    290   295   300
Phe Leu Lys Phe Gln Leu Thr Lys Ile Ser Ile Thr His Pro Leu Glu
305   310   315   320
Ser Ala Ser Ser Pro Phe Ser Ala Leu Thr Val Ala Leu Phe Trp Ser
                325   330   335
Tyr Thr Tyr Asp Lys His Ile Phe
                340

<210> 4527
<211> 885
<212> DNA
<213> Homo sapiens

<400> 4527
nnttttttttt tttttttttt tttttttttt tttttttttt tttttttttg cagagacatg
60

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gctgcattta ttgttcccag cccggcgaga aggtgttccc agaaaggttc cttgggtcac
120
ctgcccaccc agccttggct ctgggctgcc atgtccccac gggggcagga gagaggcaca
180
agtcacagtc aggcaaggga gcctcagcgt cctgggcggt ggctgttggg gtccctccag
240
tcttcacctg ggaccctcgg ccaggctggg acagcatcca ggaggcgagg ctgcatggtc
300
cagcggtggg tgcaggtggc aacaggtcgg cgggctgtgc aggttccaaa aggagctctc
360
gggttggcac tgggtgagac cagcccgggg gccagcaggg gaatgagcgg tggagcaggg
420
ggttgctggg cactggggtg ggccccatct cctgtccttc cctcatggct gctggaaggg
480
ccgcctccct ggctcagcat catctcagat tccgggactc aaacaccgtc tcctcgtcgc
540
tgtccagcga ggccatctcc gtggggtcct cagtgttggc gaggaggccg tatcgcctcc
600
gctgaggctt cttcaaccta aacgcccgga tcaggaagta gagcgcggtc aggccgcaga
660
agcccaggat cacgtagaag gagcgcgtca gcgccgagcc cgacgccccc ggcggacgcg
720
tgtgcgtgct gttgtgtggc gcgcccggct ggctcccgtt cgtcacggcc ggcggcggcg
780
acaacgtgac ctggcggggg cagcggcgag cctcttcggc accgcacggc agcgccgcca
840
gcagcagcgc cagcaggagc agcagcagcg gcggctgcag cacgc
885
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<210> 4528
<211> 206
<212> PRT
<213> Homo sapiens

<400> 4528
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Xaa Phe Phe Phe Phe Phe Phe Phe Phe Phe Phe Phe Phe Phe Phe Phe
1               5                   10                  15
Cys Arg Asp Met Ala Ala Phe Ile Val Pro Ser Pro Ala Arg Arg Cys
            20                  25                  30
Ser Gln Lys Gly Ser Leu Gly His Leu Pro Thr Gln Pro Trp Leu Trp
            35                  40                  45
Ala Ala Met Ser Pro Arg Gly Gln Glu Arg Gly Thr Ser His Ser Gln
        50                  55                  60
Ala Arg Glu Pro Gln Arg Pro Gly Arg Trp Leu Leu Gly Ser Leu Gln
65                  70                  75                  80
Ser Ser Pro Gly Thr Leu Gly Gln Ala Gly Thr Ala Ser Arg Arg Arg
                85                  90                  95
Gly Cys Met Val Gln Arg Trp Val Gln Val Ala Thr Gly Arg Arg Ala
            100                 105                 110
Val Gln Val Pro Lys Gly Ala Leu Gly Leu Ala Leu Gly Glu Thr Ser
        115                 120                 125
Pro Gly Ala Ser Arg Gly Met Ser Gly Gly Ala Gly Gly Cys Trp Ala
        130                 135                 140
Leu Gly Trp Ala Pro Ser Pro Val Leu Pro Ser Trp Leu Leu Glu Gly
```

```
145                     150                    155                     160
Pro Pro Pro Trp Leu Ser Ile Ile Ser Asp Ser Gly Thr Gln Thr Pro
                165                    170                    175
Ser Pro Arg Arg Cys Pro Ala Arg Pro Ser Pro Trp Gly Pro Gln Cys
            180                    185                    190
Trp Arg Gly Gly Arg Ile Ala Ser Ala Glu Ala Ser Ser Thr
        195                    200                    205


<210> 4529
<211> 546
<212> DNA
<213> Homo sapiens

<400> 4529
nngagagctg agaggtggaa aatggcgctg acgtgagcgc gaactcgcac tgcccagagg
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gtggccgccg cctaagctgc agccgccgga ccgcagaaa caagaggccg agccgtgtcg
120
aagatggagg agaaaccctc agggcccatc ccggacatgc tggccactgc agagcccagc
180
tccagtgaga ccgacaagga ggtgttgtcc ccggctgtgc cagctgcagc cccctcctcc
240
tccatgtcgg aggagccagg ccctgagcag gcagccacac cgccagtggg gaacgtggag
300
gggctggagg gatgcagcag ggctcctccc cagccccaga cagctgccag tctggccccg
360
gacccagccc tggcctgacc agcatagtct ccgggaccag cgaggacctg cggcctccca
420
gacgacgccc acctccaggg aagcaaatcc cttgctccag ccctggctgc tgcctcagtt
480
ttcccagcgt ccgtgacctg cacagcatc tgcgaaccca ctgcccgccg agccctatgc
540
agtctc
546


<210> 4530
<211> 84
<212> PRT
<213> Homo sapiens

<400> 4530
Met Glu Glu Lys Pro Ser Gly Pro Ile Pro Asp Met Leu Ala Thr Ala
  1               5                  10                  15
Glu Pro Ser Ser Ser Glu Thr Asp Lys Glu Val Leu Ser Pro Ala Val
            20                  25                  30
Pro Ala Ala Ala Pro Ser Ser Ser Met Ser Glu Glu Pro Gly Pro Glu
        35                  40                  45
Gln Ala Ala Thr Pro Pro Val Gly Asn Val Glu Gly Leu Glu Gly Cys
    50                  55                  60
Ser Arg Ala Pro Pro Gln Pro Gln Thr Ala Ala Ser Leu Ala Pro Asp
65                  70                  75                  80
Pro Ala Leu Ala
```

<210> 4531
<211> 1414
<212> DNA
<213> Homo sapiens

<400> 4531
nncacgtggc ctccgagcag ctcagggcgc ccttgaaagt tcttggatct gcgggttatg
60
gccggtccct tgcagggcgg tggggcccgg gccctggacc tactccgggg cctgccgcgt
120
gtgagcctgg ccaacttaaa gccgaatccc ggctccaaga aaccggagag aagaccaaga
180
ggtcggagaa gaggtagaaa atgtggcaga ggccataaag gagaaaggca aagaggaacc
240
cggcccccgct tgggctttga gggaggccag actccatttt acatccgaat cccaaaatac
300
gggtttaacg aaggacatag tttcagacgc cagtataagc ctttgagtct caatagactg
360
cagtatctta ttgatttggg tcgtgttgat cctagtcaac ctattgactt aacccagctt
420
gtcaatggga gaggtgtgac catccagcca cttaaaaggg attatggtgt ccagctggtt
480
gaggagggtg ctgacacctt tacggcaaaa gttaatattg aagtacagtt ggcttcagaa
540
ctagctattg ctgccattga aaaaaatggt ggtgttgtta ctacagcctt ctatgatcca
600
agaagtctgg acattgtatg caaacctgtt ccattctttc ttcgtggaca acccattcca
660
aaaagaatgc ttccaccaga agaactggta ccatattaca ctgatgcaaa gaaccgtggg
720
tacctggcgg atcctgccaa atttcctgaa gcacgacttg aactcgccag gaagtatggt
780
tatatcttac ctgatatcac taaagatgaa ctcttcaaaa tgctctgtac taggaaggat
840
ccaaggcaga tttttctttgg tcttgctcca ggatgggtgg tgaatatggc cgataagaaa
900
atcctaaaac ctacagatga aaatctcctt aagtattata cctcatgaat tcccgtccaa
960
ggaagcagag ttgttaaaga gtactggaat aggggctgaa ggatctatat tcccttattg
1020
cattttcctt atgtataatt ttccagatgg tgatgttact tttcagtgta ctcatatgtc
1080
tcattttcat ctaaaattaa atggcaggaa acaaggactg catagagaaa ctgagtctgt
1140
gtgggttctg tctcaaagat acaaactccc tgatagtcta tggaaggaaa atgacaacta
1200
ttttagaata tttctagttt gttttttcag tgatcttttc atccaggcct tgttactgtt
1260
acagatcaga atgaaatgca caagtggaat gggattgacc tgtaggcctg ctctgccgag
1320
atgagagcag atggaatgag ttggtgaccc ctcttaatct gtagcctcag ggaaacacgg
1380
ctacccaatg ccaagatggt aaaccctcac gcgt
1414

<210> 4532
<211> 296
<212> PRT
<213> Homo sapiens

<400> 4532
Met Ala Gly Pro Leu Gln Gly Gly Gly Ala Arg Ala Leu Asp Leu Leu
 1   5   10   15
Arg Gly Leu Pro Arg Val Ser Leu Ala Asn Leu Lys Pro Asn Pro Gly
            20   25   30
Ser Lys Lys Pro Glu Arg Arg Pro Arg Gly Arg Arg Arg Gly Arg Lys
        35   40   45
Cys Gly Arg Gly His Lys Gly Glu Arg Gln Arg Gly Thr Arg Pro Arg
        50   55   60
Leu Gly Phe Glu Gly Gly Gln Thr Pro Phe Tyr Ile Arg Ile Pro Lys
 65   70   75   80
Tyr Gly Phe Asn Glu Gly His Ser Phe Arg Arg Gln Tyr Lys Pro Leu
                85   90   95
Ser Leu Asn Arg Leu Gln Tyr Leu Ile Asp Leu Gly Arg Val Asp Pro
            100   105   110
Ser Gln Pro Ile Asp Leu Thr Gln Leu Val Asn Gly Arg Gly Val Thr
            115   120   125
Ile Gln Pro Leu Lys Arg Asp Tyr Gly Val Gln Leu Val Glu Glu Gly
        130   135   140
Ala Asp Thr Phe Thr Ala Lys Val Asn Ile Glu Val Gln Leu Ala Ser
145   150   155   160
Glu Leu Ala Ile Ala Ala Ile Glu Lys Asn Gly Gly Val Val Thr Thr
                165   170   175
Ala Phe Tyr Asp Pro Arg Ser Leu Asp Ile Val Cys Lys Pro Val Pro
            180   185   190
Phe Phe Leu Arg Gly Gln Pro Ile Pro Lys Arg Met Leu Pro Pro Glu
            195   200   205
Glu Leu Val Pro Tyr Tyr Thr Asp Ala Lys Asn Arg Gly Tyr Leu Ala
        210   215   220
Asp Pro Ala Lys Phe Pro Glu Ala Arg Leu Glu Leu Ala Arg Lys Tyr
225   230   235   240
Gly Tyr Ile Leu Pro Asp Ile Thr Lys Asp Glu Leu Phe Lys Met Leu
            245   250   255
Cys Thr Arg Lys Asp Pro Arg Gln Ile Phe Phe Gly Leu Ala Pro Gly
            260   265   ·   270
Trp Val Val Asn Met Ala Asp Lys Lys Ile Leu Lys Pro Thr Asp Glu
            275   280   285
Asn Leu Leu Lys Tyr Tyr Thr Ser
        290   295

<210> 4533
<211> 968
<212> DNA
<213> Homo sapiens

<400> 4533
acgcgtgccc agcacatgtg tgcacacgca gatgcaggag agaacacaca ccaccgtctc
60

tttgcacacg tgtgcccctg tccggacgcc ggggctgagg ccgatcgcgt cgggcagcgg
120
gcgcggcggc cccgcgcagc catggactgg ctcatgggga agtccaaagc caagcccaat
180
ggcaagaagc ccgctgcgga ggagaggaag gcctacctgg agcctgagca caccaaggcc
240
aggatcaccg acttccagtt caaggagctg gtggtgctgc cccgggagat cgacctcaac
300
gagtggctgg ccagcaacac aacaacattt ttccaccaca tcaacctgca gtatagcaca
360
atctcggagt tctgcacagg agagacgtgt cagacgatgg ccgtgtgcaa cacacagtac
420
tactggtatg acgagcgggg gaagaaggtc aagtgcacgg ccccacagta cgttgacttc
480
gtcatgagct ccgtgcagaa gctggtgacg gatgaggacg tgttccccac aaaatacggc
540
agagaattcc ccagctcctt tgagtccctg gtgaggaaga tctgcagaca cctgttccac
600
gtgctggcac acatctactg ggcccacttc aaggagacgc tggccctgga gctgcacgga
660
cacttgaaca cgctctacgt ccacttcatc ctctttgctc gggagttcaa cctgctggac
720
cccaaagaga ccgccatcat ggacgacctc accgaggtgc tatgcagcgg ggccggcggg
780
gtccacagtg ggggcagtgg ggatggggcc ggcagcgggg gcccgggagc acagaaccac
840
gtgaaggaga gatgagcccc ccgggccgga cagggggcaca cgtgtgcaaa gagacggtgg
900
tgtgtgttct ctcctgcatc tgcgtgtgca cacatgtgct gggccctctc agacctcacc
960
acacgcgt
968

<210> 4534
<211> 284
<212> PRT
<213> Homo sapiens

<400> 4534
Thr Arg Ala Gln His Met Cys Ala His Ala Asp Ala Gly Glu Asn Thr
 1   5   10   15
His His Arg Leu Phe Ala His Val Cys Pro Cys Pro Asp Ala Gly Ala
                20   25   30
Glu Ala Asp Arg Val Gly Gln Arg Ala Arg Arg Pro Arg Ala Ala Met
        35   40   45
Asp Trp Leu Met Gly Lys Ser Lys Ala Lys Pro Asn Gly Lys Lys Pro
    50   55   60
Ala Ala Glu Glu Arg Lys Ala Tyr Leu Glu Pro Glu His Thr Lys Ala
65   70   75   80
Arg Ile Thr Asp Phe Gln Phe Lys Glu Leu Val Val Leu Pro Arg Glu
                85   90   95
Ile Asp Leu Asn Glu Trp Leu Ala Ser Asn Thr Thr Thr Phe Phe His
                100   105   110
His Ile Asn Leu Gln Tyr Ser Thr Ile Ser Glu Phe Cys Thr Gly Glu

```
         115                    120                     125
Thr Cys Gln Thr Met Ala Val Cys Asn Thr Gln Tyr Tyr Trp Tyr Asp
     130                    135                    140
Glu Arg Gly Lys Lys Val Lys Cys Thr Ala Pro Gln Tyr Val Asp Phe
145                    150                     155                    160
Val Met Ser Ser Val Gln Lys Leu Val Thr Asp Glu Asp Val Phe Pro
                   165                    170                    175
Thr Lys Tyr Gly Arg Glu Phe Pro Ser Ser Phe Glu Ser Leu Val Arg
                180                    185                    190
Lys Ile Cys Arg His Leu Phe His Val Leu Ala His Ile Tyr Trp Ala
              195                    200                    205
His Phe Lys Glu Thr Leu Ala Leu Glu Leu His Gly His Leu Asn Thr
         210                    215                    220
Leu Tyr Val His Phe Ile Leu Phe Ala Arg Glu Phe Asn Leu Leu Asp
225                    230                    235                    240
Pro Lys Glu Thr Ala Ile Met Asp Asp Leu Thr Glu Val Leu Cys Ser
                   245                    250                    255
Gly Ala Gly Gly Val His Ser Gly Gly Ser Gly Asp Gly Ala Gly Ser
                   260                    265                    270
Gly Gly Pro Gly Ala Gln Asn His Val Lys Glu Arg
         275                    280
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<210> 4535
<211> 473
<212> DNA
<213> Homo sapiens

<400> 4535
cgactttttt tttttttttt ttttgagatg gagtctcgtt ctgtcaccca ggctggagtg
60
cagtggcatg atcacagctc actgcaacct ctgcctccca ggttcaagca gttctctngc
120
ctcagcctcc cgagtagctg ggattacagg cgtccgccac cacgcccggc taattttttgt
180
attttttagta gaaacggggt ttcaccatct cggccaggct ggtcttgaac tcctgacctc
240
atgatccatc cgccttggcc tcccaaagtg ctgggattac aggcatgagc taccgcgccc
300
ggccttggct gcagattaac gggaatacct cccttgggct tcctaggtga cactgtgata
360
ttcggtatga cctcccttgc tctattcctt ggaagaagta caggcactgg tcaagagtgc
420
ccgggaccca cattgcctgg ttttgaatcc cagcacctcc acatgttacg cgt
473
```

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<210> 4536
<211> 75
<212> PRT
<213> Homo sapiens

<400> 4536
Arg Leu Phe Phe Phe Phe Phe Phe Glu Met Glu Ser Arg Ser Val Thr
1               5                    10                    15
Gln Ala Gly Val Gln Trp His Asp His Ser Ser Leu Gln Pro Leu Pro
```

```
              20                    25                    30
Pro Arg Phe Lys Gln Phe Ser Xaa Leu Ser Leu Pro Ser Ser Trp Asp
          35                    40                    45
Tyr Arg Arg Pro Pro Pro Arg Pro Ala Asn Phe Cys Ile Phe Ser Arg
      50                    55                    60
Asn Gly Val Ser Pro Ser Arg Pro Gly Trp Ser
65                    70                    75
```

<210> 4537
<211> 2811
<212> DNA
<213> Homo sapiens

<400> 4537
naagcttggc acgagggaaa tgaagcctgt gatttggact ccacagtgtc tgctcttgcc
60
ctggcttttt acctagcaaa gacaactgag gctgaggaag tctttgtgcc agttttaaat
120
ataaaacgtt ctgaactacc tctgcgaggt gacattgtct tctttcttca gaaggttcat
180
attccagaga gtatcttgat ttttcgggat gagattgacc tccatgcatt ataccaggct
240
ggccaactca ccctcatcct tgtcgaccat catatcttat ccaaaagtga cacagcccta
300
gaggagngca gtagcagagg tgctagacca tcgacccatc gagccgaaac actgccctcc
360
ctgnnccatg tttcagttga gctggtgggg tcctgtgcta ccctggtgac cgagagaatc
420
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480
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600
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720
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1020
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1080
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1140
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1200
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gatgagtgcc ctctagatca ggggctgcct aaactctctg ctgaggccgt cttcgagaag
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1380
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1440
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1680
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1740
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1920
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1980
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2100
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2160
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2580
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2640
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2700
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2811
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<210> 4538
<211> 437
<212> PRT
<213> Homo sapiens

<400> 4538
Xaa Ala Trp His Glu Gly Asn Glu Ala Cys Asp Leu Asp Ser Thr Val
 1   5   10   15
Ser Ala Leu Ala Leu Ala Phe Tyr Leu Ala Lys Thr Thr Glu Ala Glu
            20   25   30
Glu Val Phe Val Pro Val Leu Asn Ile Lys Arg Ser Glu Leu Pro Leu
            35   40   45
Arg Gly Asp Ile Val Phe Phe Leu Gln Lys Val His Ile Pro Glu Ser
    50   55   60
Ile Leu Ile Phe Arg Asp Glu Ile Asp Leu His Ala Leu Tyr Gln Ala
 65   70   75   80
Gly Gln Leu Thr Leu Ile Leu Val Asp His His Ile Leu Ser Lys Ser
                85   90   95
Asp Thr Ala Leu Glu Glu Xaa Ser Ser Arg Gly Ala Arg Pro Ser Thr
            100   105   110
His Arg Ala Glu Thr Leu Pro Ser Leu Xaa His Val Ser Val Glu Leu
        115   120   125
Val Gly Ser Cys Ala Thr Leu Val Thr Glu Arg Ile Leu Gln Gly Ala
    130   135   140
Pro Glu Ile Leu Asp Arg Gln Thr Ala Ala Leu Leu His Gly Thr Ile
145   150   155   160
Ile Leu Asp Cys Val Asn Met Asp Leu Lys Ile Gly Lys Ala Thr Pro
                165   170   175
Lys Asp Ser Lys Tyr Val Glu Lys Leu Glu Ala Leu Phe Pro Asp Leu
                180   185   190
Pro Lys Arg Asn Asp Ile Phe Asp Ser Leu Gln Lys Ala Lys Phe Asp
        195   200   205
Val Ser Gly Leu Thr Thr Glu Gln Met Leu Arg Lys Asp Gln Lys Thr
    210   215   220
Ile Tyr Arg Gln Gly Val Lys Val Ala Ile Ser Ala Ile Tyr Met Asp
225   230   235   240
Leu Glu Ala Phe Leu Gln Arg Ser Asn Leu Leu Ala Asp Leu His Ala
                245   250   255
Phe Cys Gln Ala His Ser Tyr Asp Val Leu Val Ala Met Thr Ile Phe
                260   265   270
Phe Asn Thr His Asn Glu Pro Val Arg Gln Leu Ala Ile Phe Cys Pro
        275   280   285
His Val Ala Leu Gln Thr Thr Ile Cys Glu Val Leu Glu Arg Ser His
    290   295   300
Ser Pro Pro Leu Lys Leu Thr Pro Ala Ser Ser Thr His Pro Asn Leu
305   310   315   320
His Ala Tyr Leu Gln Gly Asn Thr Gln Val Ser Arg Lys Lys Leu Leu
                325   330   335
Pro Leu Leu Gln Glu Ala Leu Ser Ala Tyr Phe Asp Ser Met Lys Ile
                340   345   350
Pro Ser Gly Gln Pro Glu Thr Ala Asp Val Ser Arg Glu Gln Val Asp
            355   360   365
Lys Glu Leu Asp Arg Ala Ser Asn Ser Leu Ile Ser Gly Leu Ser Gln

```
        370                    375                    380
Asp Glu Glu Asp Pro Pro Leu Pro Pro Thr Pro Met Asn Ser Leu Val
385                    390                    395                    400
Asp Glu Cys Pro Leu Asp Gln Gly Leu Pro Lys Leu Ser Ala Glu Ala
                405                    410                    415
Val Phe Glu Lys Cys Ser Gln Ile Ser Leu Ser Gln Ser Thr Thr Ala
                420                    425                    430
Ser Leu Ser Lys Lys
            435
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<210> 4539
<211> 331
<212> DNA
<213> Homo sapiens
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<400> 4539
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tgggctggac tccgagaaag accagaagcc tgggggaaaa ccaaagggta atcaatgaac
120
tcacctggaa actccagcaa gagcagaggc aggtggagga gctgaggatg cagcttcaga
180
agcagaaaag gaataactgt tcagagaaga agccgctgcc tttcctggct gcctccatca
240
agcaagaaga ggctgtctcc agctgtcctt ttgcatccca agtacctgtg aaaagacaaa
300
gcagcagctc aaagtgtcac ccaccggctt g
331
```

```
<210> 4540
<211> 99
<212> PRT
<213> Homo sapiens
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<400> 4540
Met Gly Ala Leu Phe Leu Leu Ser Trp Met Gly Trp Thr Pro Arg Lys
  1               5                   10                  15
Thr Arg Ser Leu Gly Glu Asn Gln Arg Val Ile Asn Glu Leu Thr Trp
                20                  25                  30
Lys Leu Gln Gln Glu Gln Arg Gln Val Glu Glu Leu Arg Met Gln Leu
            35                  40                  45
Gln Lys Gln Lys Arg Asn Asn Cys Ser Glu Lys Lys Pro Leu Pro Phe
        50                  55                  60
Leu Ala Ala Ser Ile Lys Gln Glu Glu Ala Val Ser Ser Cys Pro Phe
65                  70                  75                  80
Ala Ser Gln Val Pro Val Lys Arg Gln Ser Ser Ser Ser Lys Cys His
                85                  90                  95
Pro Pro Ala
```

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<210> 4541
<211> 452
<212> DNA
<213> Homo sapiens
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<400> 4541
actagtcacc tcttctatca gatgatcatc tggatcatat tcttttagat taataatggc
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cacaggcaga tccagggatg taactgcttc agcaagaact gttgcgaatc ccttcgctgt
120
tccagtctga gaaccataaa aaatcttcac tccagacaca aagatgtctt tctcttgaag
180
ggagacataa ccatttgtca tcaaatcctg agctgctttt ggaacagatt tttcctgtaa
240
gttcttgccc tgcgtcttga tgacaatctg gacacaaatc caaaggctaa tgctaacagc
300
aaagcccaaa taaatgtaaa acctgtttat ccacaatgat attaaaggtg agaagaggtc
360
ccatgtatcc gcagagggat ccatcctcct cagagccgac aggagactag gatctcggac
420
ctggagagcc cgatgattcg cactggtact gc
452

<210> 4542
<211> 128
<212> PRT
<213> Homo sapiens

<400> 4542
Met Asp Pro Ser Ala Asp Thr Trp Asp Leu Phe Ser Pro Leu Ile Ser
1   5   10   15
Leu Trp Ile Asn Arg Phe Tyr Ile Tyr Leu Gly Phe Ala Val Ser Ile
            20   25   30
Ser Leu Trp Ile Cys Val Gln Ile Val Ile Lys Thr Gln Gly Lys Asn
        35   40   45
Leu Gln Glu Lys Ser Val Pro Lys Ala Ala Gln Asp Leu Met Thr Asn
    50   55   60
Gly Tyr Val Ser Leu Gln Glu Lys Asp Ile Phe Val Ser Gly Val Lys
65   70   75   80
Ile Phe Tyr Gly Ser Gln Thr Gly Thr Ala Lys Gly Phe Ala Thr Val
                85   90   95
Leu Ala Glu Ala Val Thr Ser Leu Asp Leu Pro Val Ala Ile Ile Asn
            100   105   110
Leu Lys Glu Tyr Asp Pro Asp Asp His Leu Ile Glu Glu Val Thr Ser
        115   120   125

<210> 4543
<211> 815
<212> DNA
<213> Homo sapiens

<400> 4543
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60
agggaggagg gagagcgagt cactgcaggt ccctggcctg cggctccgcc gtggctgcct
120
gaggccccgc gcaccaatgc tttgcacttt gcctcgcccg acaccctgcg ggccagagct
180

cctctgccgc ccaccgggct aacccttccg ggcctcacca ctcccgagtg gctctgctta
240
tccggccact gactccggct cctcggaagc agggccaccc tcctgaaatg gcttggaacg
300
gggctttcca ctggtgccct ccccagacga ttgcttgtaa tgggccagtg cctcgccagg
360
gacacagcgg cagccccctg tagcttgtgg ctgttcagaa acaagtccag cccaggtagg
420
gcagagggct ctgactgggg acccaagaag ggctggctgt gccgccaccg ctgccccgtc
480
accatcactg tgctgaagag ctcgaggctg ggcccacccg cgccggcccc acgttcctcc
540
ccgggctcag gtcagggcca gggagtgacc agaaggtgct gaccctgtgg cctgactggc
600
ccagagctca cccctgaaca tgagcaagcg caaagaaacc cccatccctg ctcccaaaaa
660
agggcgcccc caaggccatt ttgaaggtgg ggggaagccc ggattccgag aaaccgcaac
720
cagccgtcta cctcaggaag ctcgctaggg aggagcgcat tctatgtgac taatgcggac
780
tggcctgcac cgcctacgga gagaagacaa cgcgt
815

<210> 4544
<211> 150
<212> PRT
<213> Homo sapiens

<400> 4544
Met Val Thr Gly Gln Arg Trp Arg His Ser Gln Pro Phe Leu Gly Pro
 1   5   10   15
Gln Ser Glu Pro Ser Ala Leu Pro Gly Leu Asp Leu Phe Leu Asn Ser
            20   25   30
His Lys Leu Gln Gly Ala Ala Ala Val Ser Leu Ala Arg His Trp Pro
        35   40   45
Ile Thr Ser Asn Arg Leu Gly Arg Ala Pro Val Glu Ser Pro Val Pro
    50   55   60
Ser His Phe Arg Arg Val Ala Leu Leu Pro Arg Ser Arg Ser Gln Trp
65   70   75   80
Pro Asp Lys Gln Ser His Ser Gly Val Val Arg Pro Gly Arg Val Ser
                85   90   95
Pro Val Gly Gly Arg Gly Ala Leu Ala Arg Arg Val Ser Gly Glu Ala
                100   105   110
Lys Cys Lys Ala Leu Val Arg Gly Ala Ser Gly Ser His Gly Gly Ala
            115   120   125
Ala Gly Gln Gly Pro Ala Val Thr Arg Ser Pro Ser Ser Leu Cys Leu
    130   135   140
Ala Leu Val Ser Thr Gly
145   150

<210> 4545
<211> 3568
<212> DNA
<213> Homo sapiens

<400> 4545
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tcaaagagtc agtcagaaga acaggaagag cctgctaaaa ctgatcaggc tgtcagcaaa
120
gacagaaatg cagaggagaa aaagcgttta tctcttcagc gagaaaagat tatcgcaagg
180
gtgagtattg ataacaggac ccgggcatta gttcaggcat taagaagaac aactgaccca
240
aagctctgca ttactagggt tgaagaactg acttttcatc ttctagaatt tcctgaagga
300
aaaggagtgg ctgtcaagga aagaattatt ccatatttat tacgactgag acaaattaag
360
gatgaaactc ttcaggctgc agttagagaa attttggccc taattggcta tgtggatcca
420
gtgaaaggga gaggaatccg aattctctca attgatggtg gaggaacaag gggcgtggtt
480
gctctccaga ccctacgaaa attagttgaa cttactcaga agccagttca tcagctcttt
540
gattacattt gtggtgtaag cacaggtgcc atattagctt tcatgttggg gttgtttcat
600
atgcccttgg atgaatgtga ggaactttat cgaaaattag gatcagatgt attttcacaa
660
aatgtcattg ttggaacagt aaaaatgagt tggagccatg catttttatga cagtcaaaca
720
tgggaaaaca ttcttaagga taggatggga tctgcactga tgattgaaac agcaagaaac
780
cccacatgtc ctaaggtagc tgctgtaagt accatagtaa atagagggat aacacccaaa
840
gcttttgtgt tcagaaacta tggtcatttt cctggaatca actctcatta tttgggaggc
900
tgtcagtata aaatgtggca ggccattaga gcctcatctg ctgctccagg ctactttgca
960
gaatatgcat tgggaaatga tcttcatcaa gatggaggtt tgcttctgaa taacccttcg
1020
gcattagcta tgcatgagtg taaatgtctt tggccagatg tgccgttaga gtgcatagta
1080
tccctgggca ctggacgtta tgagagtgat gtgagaaaca cggtaacata cacaagcttg
1140
aaaactaaac tttctaatgt tatcaacagt gctacagata cagaagaagt ccatataatg
1200
cttgatggcc tgttacctcc tgacacctat tttagattca atcctgtaat gtgtgaaaac
1260
atacctctag atgaaagtcg aaatgaaaag ctggatcagc tgcagttgga agggttgaaa
1320
tacatagaaa gaaatgaaca aaaaatgaaa aaagttgcaa aaatattaag tcaagaaaaa
1380
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1440
ccattctttt caaaattgtg atgagtatat gcttatgttc tcataaatga aggtctgttt
1500
agaagatcaa ccacattcaa taaggaattg tggggttcga catgagttaa ctttgaaata
1560

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cgtatgaatt ctggagaatc ctgaaaaaga cggtgcttca accagcttgc atagcacaga
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1680
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1740
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1800
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1860
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1920
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1980
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2040
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2100
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2160
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2220
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2280
tcaaagtcat atgccacttc acaccaacca catttgtcaa aataaaaaaa aaaaaacagg
2340
aaataggaat tgttgataag aatgtggagg tattggaacc cctgtacatt gctggtgaga
2400
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2460
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2520
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2580
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2640
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2700
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2820
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2880
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2940
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3000
ttctctaata aagtagattt tcagcaacaa agggcccatt agaatggaag catactctga
3060
agggttatta gttatcaact cctaacatgc aaaatatttt taggtagcat ttttatatag
3120
aagaaattat attcaggcat attaagcatt gagtgtcatt attattgatg tataatggat
3180
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3738

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tcccatccaa cattatggtg tgattttaaa agaagagcca ggaaatcaaa agtattttct
3240
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3300
cagatacttt tactcattat ccaatgctct aaggccaccc agagagactg gattatctac
3360
attgactatt cacatttcct tagatatatt tatttgaatg atggcttcta caaagtagag
3420
aagtctgtca ttatgagaga taaagccagc tgggcttctg ggttgggtgg ggtcttggag
3480
aacttttctg tctagctaaa ggattgtaag tgcacccatc agcactctgt aaaaacacac
3540
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3568
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<210> 4546
<211> 380
<212> PRT
<213> Homo sapiens
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<400> 4546
Glu Arg Ile Ile Pro Tyr Leu Leu Arg Leu Arg Gln Ile Lys Asp Glu
1               5                   10                  15
Thr Leu Gln Ala Ala Val Arg Glu Ile Leu Ala Leu Ile Gly Tyr Val
            20                  25                  30
Asp Pro Val Lys Gly Arg Gly Ile Arg Ile Leu Ser Ile Asp Gly Gly
        35                  40                  45
Gly Thr Arg Gly Val Val Ala Leu Gln Thr Leu Arg Lys Leu Val Glu
    50                  55                  60
Leu Thr Gln Lys Pro Val His Gln Leu Phe Asp Tyr Ile Cys Gly Val
65                  70                  75                  80
Ser Thr Gly Ala Ile Leu Ala Phe Met Leu Gly Leu Phe His Met Pro
                85                  90                  95
Leu Asp Glu Cys Glu Glu Leu Tyr Arg Lys Leu Gly Ser Asp Val Phe
            100                 105                 110
Ser Gln Asn Val Ile Val Gly Thr Val Lys Met Ser Trp Ser His Ala
        115                 120                 125
Phe Tyr Asp Ser Gln Thr Trp Glu Asn Ile Leu Lys Asp Arg Met Gly
    130                 135                 140
Ser Ala Leu Met Ile Glu Thr Ala Arg Asn Pro Thr Cys Pro Lys Val
145                 150                 155                 160
Ala Ala Val Ser Thr Ile Val Asn Arg Gly Ile Thr Pro Lys Ala Phe
                165                 170                 175
Val Phe Arg Asn Tyr Gly His Phe Pro Gly Ile Asn Ser His Tyr Leu
            180                 185                 190
Gly Gly Cys Gln Tyr Lys Met Trp Gln Ala Ile Arg Ala Ser Ser Ala
        195                 200                 205
Ala Pro Gly Tyr Phe Ala Glu Tyr Ala Leu Gly Asn Asp Leu His Gln
    210                 215                 220
Asp Gly Gly Leu Leu Leu Asn Asn Pro Ser Ala Leu Ala Met His Glu
225                 230                 235                 240
Cys Lys Cys Leu Trp Pro Asp Val Pro Leu Glu Cys Ile Val Ser Leu
                245                 250                 255
Gly Thr Gly Arg Tyr Glu Ser Asp Val Arg Asn Thr Val Thr Tyr Thr
```

```
            260                265                 270
Ser Leu Lys Thr Lys Leu Ser Asn Val Ile Asn Ser Ala Thr Asp Thr
        275                280                285
Glu Glu Val His Ile Met Leu Asp Gly Leu Leu Pro Pro Asp Thr Tyr
    290                295                300
Phe Arg Phe Asn Pro Val Met Cys Glu Asn Ile Pro Leu Asp Glu Ser
305                310                315                   320
Arg Asn Glu Lys Leu Asp Gln Leu Gln Leu Glu Gly Leu Lys Tyr Ile
            325                330                   335
Glu Arg Asn Glu Gln Lys Met Lys Lys Val Ala Lys Ile Leu Ser Gln
        340                345                350
Glu Lys Thr Thr Leu Gln Lys Ile Asn Asp Trp Ile Lys Leu Lys Thr
        355                360                365
Asp Met Tyr Glu Gly Leu Pro Phe Phe Ser Lys Leu
        370                375                    380
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<210> 4547
<211> 2211
<212> DNA
<213> Homo sapiens

<400> 4547
ngtttcattc tcttgttctt ctacagtgga gacagattcc tctgaactta tgtctggttc
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120
cacagttcga cgaatcggca tggtgctatc ttctaccttc tctgagctcg gcggctggga
180
ctggaggaca gcggtggcgg aggcgactag cggcggcggg agcggcgccg agaggccgtg
240
cgggacgcgg gcgccaggac cggccgaacg cagaggttga ttcttcacca cactgaaacc
300
attaggaaaa atccttgtgg ttaacagcag aggcttcaga gtgtaacctg tactcgggcc
360
tagaaattat ttaaaatggc gactgatacg tctcaaggtg aactcgtcca tcctaaggca
420
ctcccactta tagtaggagc tcagctgatc cacgcggaca agttaggtga gaaggtagaa
480
gatagcacca tgccgattcg tcgaactgtg aattctaccc gggaaactcc tcccaaaagc
540
aagcttgctg aagggagga agaaaagcca gaaccagaca taagttcaga ggaatctgtc
600
tccactgtag aagaacaaga gaatgaaact ccacctgcta cttcgagtga ggcagagcag
660
ccaaaggggg aacctgagaa tgaagagaag gaagaaaata agtcttctga ggaaaccaaa
720
aaggatgaga aagatcagtc taaagaaaag gagaagaaag tgaaaaaaac aattccttcc
780
tgggctaccc tttctgccag ccagctagcc agggcccaga aacaaacacc gatggcttct
840
tccccacgtc ccaagatgga tgcaatctta actgaggcca ttaaggcatg cttccagaag
900
agtggtgcat cagtggttgc tattcgaaaa tacatcatcc ataagtatcc ttctctggag
960
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ctggagagaa gggggttatct ccttaaacaa gcactgaaaa gagaattaaa tagaggagtc
1020
atcaaacagg tattacacaa tgttaaagga aaaggtgctt ctggaagttt tgttgtggtt
1080
cagaaatcaa gaaaaacacc tcagaaatcc agaaacagaa agaataggag ctctgcagtg
1140
gatccagaac cacaagtaaa attggaggat gtcctcccac tggcctttac tcgcctttgt
1200
gaacctaaag aagcttccta cagtctcatc aggaaatatg tgtctcagta ttatcctaag
1260
cttagagtgg acatcaggcc tcagctgttg aagaacgctc tgcagagagc agtagagagg
1320
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1380
ggggagaaac ccctgcttgg tggaagcctg atggaatatg caatcttgtc tgccattgct
1440
gccatgaatg agccgaagac ctgctctacc actgctctga agaagtatgt cctagagaat
1500
cacccaggaa ccaattctaa ctatcaaatg catttgctga aaaaaaccct gcagaaatgc
1560
gaaaagaatg ggtggatgga acagatctct gggaaagggt tcagtggcac cttccagctc
1620
tgttttccct attatcccag cccaggagtt ctgtttccga gaaagagcc agatgattct
1680
agagatgagg atgaagatga agatgagtca tcagaagaag actctgagga tgaagagccg
1740
ccacctaaga gaaggttgca gaagaaaacc ccagccaagt ccccagggaa ggccgcatct
1800
gtgaagcaga gagggtccaa acctgcacct aaagtctcag ctgcccagcg ggggaaagct
1860
aggcccttgc ctaagaaagc acctcctaag gccaaaacgc ctgccaagaa gaccagaccc
1920
tcatccacag tcatcaagaa acctagtggt ggctcctcaa agaagcctgc aaccagtgca
1980
agaaaggaag taaaattgcc gggcaagggc aaatccacca tgaagaagtc tttcagagtg
2040
aaaaagtaaa ttttatagga aaaaagggta tcatgatgaa attcaaaatc ttattttcta
2100
aggtcagtgt gcatttgttt agttttgatg cttttcaaat tacattattt tcctccccta
2160
tgaacattgt ggggagggac tctaaataaa ccagtttagg catttgctag c
2211
```

```
<210> 4548
<211> 515
<212> PRT
<213> Homo sapiens

<400> 4548
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1               5               10              15
Glu Gly Glu Glu Glu Lys Pro Glu Pro Asp Ile Ser Ser Glu Glu Ser
            20              25              30
Val Ser Thr Val Glu Glu Gln Glu Asn Glu Thr Pro Pro Ala Thr Ser
```

```
            35                     40                     45
Ser Glu Ala Glu Gln Pro Lys Gly Glu Pro Glu Asn Glu Glu Lys Glu
    50                     55                     60
Glu Asn Lys Ser Ser Glu Glu Thr Lys Lys Asp Glu Lys Asp Gln Ser
65                     70                     75                     80
Lys Glu Lys Glu Lys Lys Val Lys Lys Thr Ile Pro Ser Trp Ala Thr
                85                     90                     95
Leu Ser Ala Ser Gln Leu Ala Arg Ala Gln Lys Gln Thr Pro Met Ala
                100                    105                    110
Ser Ser Pro Arg Pro Lys Met Asp Ala Ile Leu Thr Glu Ala Ile Lys
                115                    120                    125
Ala Cys Phe Gln Lys Ser Gly Ala Ser Val Val Ala Ile Arg Lys Tyr
    130                    135                    140
Ile Ile His Lys Tyr Pro Ser Leu Glu Leu Glu Arg Arg Gly Tyr Leu
145                    150                    155                    160
Leu Lys Gln Ala Leu Lys Arg Glu Leu Asn Arg Gly Val Ile Lys Gln
                165                    170                    175
Val Leu His Asn Val Lys Gly Lys Gly Ala Ser Gly Ser Phe Val Val
                180                    185                    190
Val Gln Lys Ser Arg Lys Thr Pro Gln Lys Ser Arg Asn Arg Lys Asn
                195                    200                    205
Arg Ser Ser Ala Val Asp Pro Glu Pro Gln Val Lys Leu Glu Asp Val
    210                    215                    220
Leu Pro Leu Ala Phe Thr Arg Leu Cys Glu Pro Lys Glu Ala Ser Tyr
225                    230                    235                    240
Ser Leu Ile Arg Lys Tyr Val Ser Gln Tyr Tyr Pro Lys Leu Arg Val
                245                    250                    255
Asp Ile Arg Pro Gln Leu Leu Lys Asn Ala Leu Gln Arg Ala Val Glu
                260                    265                    270
Arg Gly Gln Leu Glu Gln Ile Thr Gly Lys Gly Ala Ser Gly Thr Phe
                275                    280                    285
Gln Leu Lys Lys Ser Gly Glu Lys Pro Leu Leu Gly Gly Ser Leu Met
    290                    295                    300
Glu Tyr Ala Ile Leu Ser Ala Ile Ala Ala Met Asn Glu Pro Lys Thr
305                    310                    315                    320
Cys Ser Thr Thr Ala Leu Lys Lys Tyr Val Leu Glu Asn His Pro Gly
                325                    330                    335
Thr Asn Ser Asn Tyr Gln Met His Leu Leu Lys Lys Thr Leu Gln Lys
                340                    345                    350
Cys Glu Lys Asn Gly Trp Met Glu Gln Ile Ser Gly Lys Gly Phe Ser
                355                    360                    365
Gly Thr Phe Gln Leu Cys Phe Pro Tyr Tyr Pro Ser Pro Gly Val Leu
370                    375                    380
Phe Pro Lys Lys Glu Pro Asp Asp Ser Arg Asp Glu Asp Glu Asp Glu
385                    390                    395                    400
Asp Glu Ser Ser Glu Glu Asp Ser Glu Asp Glu Glu Pro Pro Pro Lys
                405                    410                    415
Arg Arg Leu Gln Lys Lys Thr Pro Ala Lys Ser Pro Gly Lys Ala Ala
                420                    425                    430
Ser Val Lys Gln Arg Gly Ser Lys Pro Ala Pro Lys Val Ser Ala Ala
    435                    440                    445
Gln Arg Gly Lys Ala Arg Pro Leu Pro Lys Lys Ala Pro Pro Lys Ala
    450                    455                    460
Lys Thr Pro Ala Lys Lys Thr Arg Pro Ser Ser Thr Val Ile Lys Lys
```

```
465                    470                    475                    480
Pro Ser Gly Gly Ser Ser Lys Lys Pro Ala Thr Ser Ala Arg Lys Glu
                    485                    490                    495
Val Lys Leu Pro Gly Lys Gly Lys Ser Thr Met Lys Lys Ser Phe Arg
            500                    505                    510
Val Lys Lys
        515
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<210> 4549
<211> 2927
<212> DNA
<213> Homo sapiens

<400> 4549
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ctcttgctgg ccagcacgga gcccagcagc ctgtgctatg tggagacggt ggacattgac
120
ggggagacca acttgaagtt cagacaggcc ctgatggtca cccacaaaga actggccact
180
ataaagaaga tggcgtcctt tcaaggcaca gtgacgtgtg aggcgcctaa cagtcggatg
240
caccacttcg tggggtgcct ggaatggaat gacaagaaat actccctgga cattggcaac
300
ctcctcctcc gaggctgcag gattcgcaac acagacacct gctatggact ggtcatttat
360
gctgatggat acatgtttgt aggttttgac acaaaaatta tgaagaactg tggcaagatc
420
catttgaaga gaaccaagct ggacctcctg atgaacaagc tggtggttgt gatcttcatc
480
tccgtggtgc ttgtctgcct ggtgttggcc ttcggcttcg gtttctcagt caaagaattc
540
aaagaccacc actactacct ctcggggggtg catgggagca gcgtggccgc agagtccttc
600
ttcgtcttct ggagcttcct catcctgctc agcgtcacca tcccgatgtc catgttcatc
660
ctgtccgagt tcatctacct ggggaacagc gtcttcatcg actgggacgt gcagatgtac
720
tacaagccgc aggacgtgcc tgccaaggcc cgcagcacca gcctcaacga ccacctgggc
780
caggtggaat acatcttctc ggacaagacg ggcacgctca cgcagaacat cttgaccttc
840
aacaagtgct gcatcagcgg ccgcgtctat ggagaacccc tacctctgga caagttcgc
900
cgacgggaag ctgctcttcc acaatgcggc cctgctgcac ctcgtgcgga ccaacgggga
960
cgaggccgtg cgggagttct ggcgcctgct ggccatctgc cacacggtga tgaccagctg
1020
ttgtaccagg cggcctcccc cgacgagggg gcgctggtca ccgcagcccg gaacttcggc
1080
tacgtgttcc tgtcccgcac ccaggacacc gtcacgatca tggagctggg ggaggaacgg
1140
gtctaccagg tcctggccat aatggacttc aacagcacgc gcaaacggat gtcggtgctg
1200
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gttcgaaagc cagagggcgc catctgcctg tacaccaagg gcgccgacac ggtcatcttc
1260
gaacgcttgc acaggagggg ggcaatggaa tttgccacag aggaggcctt ggctgccttt
1320
gcccaggaga ccctgcggac actgtgcctg gcctacaggg aggtggctga ggacatttac
1380
gaggactggc agcagcgcca ccaggaggcc agcctcctgc tgcagaaccg ggcacaggcc
1440
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1500
gaggacagac tccaggacgg tgtccctgaa accatcaaat gtctcaagaa gagcaacatc
1560
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1620
gagctgctgt cagagaatat gctcattctg gaggagaagg agattagccg catcctggag
1680
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1740
gccttggtca ttaacggaga cttcctggac aaactgctgg tgtccctgcg gaaggagccg
1800
cgcgccctgg cgcagaacgt gaacatggac gaggcgtggc aggagctcgg ccagtccagg
1860
agggatttcc tctacgccag gcgcctgtcc ctgctgtgcc ggaggttcgg gctcccgctg
1920
gctgcaccgc cagcccagga ctccagagcc cgccgtagct ccgaggtgct gcaggagcgc
1980
gccttcgtgg acctggcgtc caagtgccag gcggtcatct gctgccgcgt gacgcccaag
2040
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2160
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2220
ctgcagcgcc tcctgctggt gcacggccgc tggtcctacg tgcggatctg caagttcctg
2280
cgctacttct tctacaagag catggccagc atgatggtgc aggtctggtt tgcctgctac
2340
aacggcttca ccggccagga cgtgagcgca gagcagagcc tggagaagcc ggagctgtac
2400
gtggtgggct agaaggacga gctcttcaac tactgggtct tcgtccaagc catcgcccat
2460
ggtgtgacca cctctctggt caacttcttc atgacactgt ggatcagccg cgacacggcg
2520
ggacccgcca gcttcagcga ccaccagtcc tttgcggtcg tggtggccct gtcttgcctg
2580
ctgtccatca ccatggaggt cattcttatc atcaagtact ggaccgccct gtgcgtggcg
2640
accatcctcc tcagccttgg tttctacgcc atcatgacta ccaccaccca gagcttctgg
2700
ctcttcagaa tgccgacctc agcgtgatgt cctctccctc catcctgctg gtggtcctgc
2760
tgagtgtgtc cataaacacc ttccctgtcc tggccctccg agtcatcttc ccagccctca
2820
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aggagctacg tgccaaggtg aggtgggcct gggcctgggg tcctcatctg gtacattcca
2880
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2927

<210> 4550
<211> 908
<212> PRT
<213> Homo sapiens

<400> 4550
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Asp Leu Cys Val Gly Asp Val Val Cys Leu Arg Lys Asp Asn Ile Val
 1           5               10              15
Pro Ala Asp Met Leu Leu Leu Ala Ser Thr Glu Pro Ser Ser Leu Cys
            20              25              30
Tyr Val Glu Thr Val Asp Ile Asp Gly Glu Thr Asn Leu Lys Phe Arg
            35              40              45
Gln Ala Leu Met Val Thr His Lys Glu Leu Ala Thr Ile Lys Lys Met
    50              55              60
Ala Ser Phe Gln Gly Thr Val Thr Cys Glu Ala Pro Asn Ser Arg Met
65              70              75              80
His His Phe Val Gly Cys Leu Glu Trp Asn Asp Lys Lys Tyr Ser Leu
            85              90              95
Asp Ile Gly Asn Leu Leu Leu Arg Gly Cys Arg Ile Arg Asn Thr Asp
            100             105             110
Thr Cys Tyr Gly Leu Val Ile Tyr Ala Asp Gly Tyr Met Phe Val Gly
            115             120             125
Phe Asp Thr Lys Ile Met Lys Asn Cys Gly Lys Ile His Leu Lys Arg
    130             135             140
Thr Lys Leu Asp Leu Leu Met Asn Lys Leu Val Val Val Ile Phe Ile
145             150             155             160
Ser Val Val Leu Val Cys Leu Val Leu Ala Phe Gly Phe Gly Phe Ser
            165             170             175
Val Lys Glu Phe Lys Asp His His Tyr Tyr Leu Ser Gly Val His Gly
            180             185             190
Ser Ser Val Ala Ala Glu Ser Phe Phe Val Phe Trp Ser Phe Leu Ile
            195             200             205
Leu Leu Ser Val Thr Ile Pro Met Ser Met Phe Ile Leu Ser Glu Phe
    210             215             220
Ile Tyr Leu Gly Asn Ser Val Phe Ile Asp Trp Asp Val Gln Met Tyr
225             230             235             240
Tyr Lys Pro Gln Asp Val Pro Ala Lys Ala Arg Ser Thr Ser Leu Asn
            245             250             255
Asp His Leu Gly Gln Val Glu Tyr Ile Phe Ser Asp Lys Thr Gly Thr
            260             265             270
Leu Thr Gln Asn Ile Leu Thr Phe Asn Lys Cys Cys Ile Ser Gly Arg
            275             280             285
Val Tyr Gly Glu Pro Leu Pro Leu Glu Gln Val Arg Arg Arg Glu Ala
    290             295             300
Ala Leu Pro Gln Cys Gly Pro Ala Ala Pro Arg Ala Asp Gln Arg Gly
305             310             315             320
Arg Gly Arg Ala Gly Val Leu Ala Pro Ala Gly His Leu Pro His Gly
            325             330             335
Asp Asp Gln Leu Leu Tyr Gln Ala Ala Ser Pro Asp Glu Gly Ala Leu
```

```
              340                  345                  350
Val Thr Ala Ala Arg Asn Phe Gly Tyr Val Phe Leu Ser Arg Thr Gln
         355                  360                  365
Asp Thr Val Thr Ile Met Glu Leu Gly Glu Glu Arg Val Tyr Gln Val
     370                  375                  380
Leu Ala Ile Met Asp Phe Asn Ser Thr Arg Lys Arg Met Ser Val Leu
385                  390                  395                  400
Val Arg Lys Pro Glu Gly Ala Ile Cys Leu Tyr Thr Lys Gly Ala Asp
              405                  410                  415
Thr Val Ile Phe Glu Arg Leu His Arg Arg Gly Ala Met Glu Phe Ala
              420                  425                  430
Thr Glu Glu Ala Leu Ala Ala Phe Ala Gln Glu Thr Leu Arg Thr Leu
         435                  440                  445
Cys Leu Ala Tyr Arg Glu Val Ala Glu Asp Ile Tyr Glu Asp Trp Gln
     450                  455                  460
Gln Arg His Gln Glu Ala Ser Leu Leu Leu Gln Asn Arg Ala Gln Ala
465                  470                  475                  480
Leu Gln Gln Val Tyr Asn Glu Met Glu Gln Asp Leu Arg Leu Leu Gly
              485                  490                  495
Ala Thr Ala Ile Glu Asp Arg Leu Gln Asp Gly Val Pro Glu Thr Ile
              500                  505                  510
Lys Cys Leu Lys Lys Ser Asn Ile Lys Ile Trp Val Leu Thr Gly Asp
         515                  520                  525
Lys Gln Glu Thr Ala Val Asn Ile Gly Phe Ala Cys Glu Leu Leu Ser
     530                  535                  540
Glu Asn Met Leu Ile Leu Glu Glu Lys Glu Ile Ser Arg Ile Leu Glu
545                  550                  555                  560
Thr Tyr Trp Glu Asn Ser Asn Asn Leu Leu Thr Arg Glu Ser Leu Ser
              565                  570                  575
Gln Val Lys Leu Ala Leu Val Ile Asn Gly Asp Phe Leu Asp Lys Leu
         580                  585                  590
Leu Val Ser Leu Arg Lys Glu Pro Arg Ala Leu Ala Gln Asn Val Asn
         595                  600                  605
Met Asp Glu Ala Trp Gln Glu Leu Gly Gln Ser Arg Arg Asp Phe Leu
     610                  615                  620
Tyr Ala Arg Arg Leu Ser Leu Leu Cys Arg Arg Phe Gly Leu Pro Leu
625                  630                  635                  640
Ala Ala Pro Pro Ala Gln Asp Ser Arg Ala Arg Arg Ser Ser Glu Val
              645                  650                  655
Leu Gln Glu Arg Ala Phe Val Asp Leu Ala Ser Lys Cys Gln Ala Val
              660                  665                  670
Ile Cys Cys Arg Val Thr Pro Lys Gln Lys Ala Leu Ile Val Ala Leu
     675                  680                  685
Val Lys Lys Tyr His Gln Val Val Thr Leu Ala Ile Gly Asp Gly Ala
     690                  695                  700
Asn Asp Ile Asn Met Ile Lys Thr Ala Asp Val Gly Val Gly Leu Ala
705                  710                  715                  720
Gly Gln Glu Gly Met Gln Ala Val Gln Asn Ser Asp Phe Val Leu Gly
              725                  730                  735
Gln Phe Cys Phe Leu Gln Arg Leu Leu Leu Val His Gly Arg Trp Ser
              740                  745                  750
Tyr Val Arg Ile Cys Lys Phe Leu Arg Tyr Phe Phe Tyr Lys Ser Met
     755                  760                  765
Ala Ser Met Met Val Gln Val Trp Phe Ala Cys Tyr Asn Gly Phe Thr
```

```
        770                        775                        780
Gly Gln Asp Val Ser Ala Glu Gln Ser Leu Glu Lys Pro Glu Leu Tyr
785                        790                        795                        800
Val Val Gly Gln Lys Asp Glu Leu Phe Asn Tyr Trp Val Phe Val Gln
                    805                        810                        815
Ala Ile Ala His Gly Val Thr Thr Ser Leu Val Asn Phe Phe Met Thr
                    820                        825                        830
Leu Trp Ile Ser Arg Asp Thr Ala Gly Pro Ala Ser Phe Ser Asp His
                    835                        840                        845
Gln Ser Phe Ala Val Val Val Ala Leu Ser Cys Leu Leu Ser Ile Thr
                    850                        855                        860
Met Glu Val Ile Leu Ile Ile Lys Tyr Trp Thr Ala Leu Cys Val Ala
865                        870                        875                        880
Thr Ile Leu Leu Ser Leu Gly Phe Tyr Ala Ile Met Thr Thr Thr Thr
                    885                        890                        895
Gln Ser Phe Trp Leu Phe Arg Met Pro Thr Ser Ala
                    900                        905
```

```
<210> 4551
<211> 361
<212> DNA
<213> Homo sapiens

<400> 4551
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atggagggac catcggtcag ggtgaggaca ggaggaaggg ggtctagggc ccttcaggga
120
caggcagggg tggctttgcc tgtctcagag caggcctcag cagcacactg tccagtacca
180
ggcatcagtg agggtccaag aacttgcagc cagcagggac gacagggcag ggcccccagg
240
agagacccca cacagcgcac atgggagagt ggatgccaaa ggtgggcagc ggggagggcg
300
cctgccaaac agtccctgtg tggtgtgccg cacgctgctg aggtctctgt gcggtgttgg
360
c
361


<210> 4552
<211> 100
<212> PRT
<213> Homo sapiens

<400> 4552
```

```
Met Glu Gly Pro Ser Val Arg Val Arg Thr Gly Gly Arg Gly Ser Arg
 1               5                        10                        15
Ala Leu Gln Gly Gln Ala Gly Val Ala Leu Pro Val Ser Glu Gln Ala
                20                        25                        30
Ser Ala Ala His Cys Pro Val Pro Gly Ile Ser Glu Gly Pro Arg Thr
                35                        40                        45
Cys Ser Gln Gln Gly Arg Gln Gly Arg Ala Pro Arg Arg Asp Pro Thr
                50                        55                        60
Gln Arg Thr Trp Glu Ser Gly Cys Gln Arg Trp Ala Ala Gly Arg Ala
```

```
65                 70                 75                 80
Pro Ala Lys Gln Ser Leu Cys Gly Val Pro His Ala Ala Glu Val Ser
                85                 90                 95
Val Arg Cys Trp
            100
```

<210> 4553
<211> 2970
<212> DNA
<213> Homo sapiens

<400> 4553
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gaattactca atctcctatg accatctata catactccac cttcaaaaag tacatcaata
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ttatatcatt aaggaaatag taaccttctc ttctccaata tgcatgacat ttttggacaa
120
tgcaattgtg gcactggcac ttatttcagt gaagaaaaac tttgtggttc tatggcattc
180
atcatttgac aaatgcaagc atcttcctta tcaatcagct cctattgaac ttactagcac
240
tgactgtgga atccttaagg gcccattaca tttctgaaga agaaagctaa gatgaaggac
300
atgccactcc gaattcatgt gctacttggc ctagctatca ctacactagt acaagctgta
360
gataaaaaag tggattgtcc acggttatgt acgtgtgaaa tcaggccttg gtttacaccc
420
agatccattt atatggaagc atctacagtg gattgtaatg atttaggtct tttaactttc
480
ccagccagat tgccagctaa cacacagatt cttctcctac agactaacaa tattgcaaaa
540
attgaatact ccacagactt tccagtaaac cttactggcc tggatttatc tcaaaacaat
600
ttatcttcag tcaccaatat taatgtaaaa aagatgcctc agctcctttc tgtgtaccta
660
gaggaaaaca aacttactga actgcctgaa aaatgtctgt ccgaactgag caacttacaa
720
gaactctata ttaatcacaa cttgctttct acaatttcac ctggagcctt tattggccta
780
cataatcttc ttcgacttca tctcaattca aatagattgc agatgatcaa cagtaagtgg
840
tttgatgctc ttccaaatct agagattctg atgattgggg aaaatccaat tatcagaatc
900
aaagacatga actttaagcc tcttatcaat cttcgcagcc tggttatagc tggtataaac
960
ctcacagaaa taccagataa cgccttggtt ggactggaaa acttagaaag catctctttt
1020
tacgataaca ggcttattaa agtaccccat gttgctcttc aaaaagttgt aaatctcaaa
1080
tttttggatc taaataaaaa tcctattaat agaatacgaa ggggtgattt tagcaatatg
1140
ctacacttaa aagagttggg gataaataat atgcctgagc tgatttccat cgatagtctt
1200
gctgtggata acctgccaga tttaagaaaa atagaagcta ctaacaaccc tagattgtct
1260
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```
tacattcacc ccaatgcatt tttcagactc cccaagctgg aatcactcat gctgaacagc
1320
aatgctctca gtgccctgta ccatggtacc attgagtctc tgccaaacct caaggaaatc
1380
agcatacaca gtaaccccat caggtgtgac tgtgtcatcc gttggatgaa catgaacaaa
1440
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1500
ggtcagaatg ttcggcaagt gcatttcagg gacatgatgg aaatttgtct ccctcttata
1560
gctcctgaga gctttccttc taatctaaat gtagaagctg ggagctatgt ttcctttcac
1620
tgtagagcta ctgcagaacc acagcctgaa atctactgga taacaccttc tggtcaaaaa
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1740
aatggcgtaa ctcccaaaga aggggggttta tatacttgta tagcaactaa cctagttggc
1800
gctgacttga agtctgttat gatcaaagtg gatggatctt ttccacaaga taacaatggc
1860
tctttgaata ttaaaataag agatattcag gccaattcag ttttggtgtc ctggaaagca
1920
agttctaaaa ttctcaaatc tagtgttaaa tggacagcct ttgtcaagac tgaaaattct
1980
catgctgcgc aaagtgctcg aataccatct gatgtcaagg tatataatct tactcatctg
2040
aatccatcaa ctgagtataa aatttgtatt gatattccca ccatctatca gaaaaacaga
2100
aaaaaatgtg taaatgtcac caccaaaggt ttgcaccctg atcaaaaaga gtatgaaaag
2160
aataatacca caacacttat ggcctgtctt ggaggccttc tggggattat tggtgtgata
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2340
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2400
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2460
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2520
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2580
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2640
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2700
agtggacaaa aacatttctg tattttttt aagtaaataa gagtagttga actgagcaat
2760
acctcctcct gtgttgtatt acacatatta gccacgagtt tttgcagtga ccagataaac
2820
ttgaattgac acgtggtgta ataaaatgga caaattctgt agagtagaca cagtgagtat
2880
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gtggacctct tttataagga aaaatacatt ttggattaaa atcaattgct tctgtcttgt
2940
tttgtttcta aataaagaat aatttctggg
2970

<210> 4554
<211> 705
<212> PRT
<213> Homo sapiens

<400> 4554
Met Pro Leu Arg Ile His Val Leu Leu Gly Leu Ala Ile Thr Thr Leu
1   5   10   15
Val Gln Ala Val Asp Lys Lys Val Asp Cys Pro Arg Leu Cys Thr Cys
            20   25   30
Glu Ile Arg Pro Trp Phe Thr Pro Arg Ser Ile Tyr Met Glu Ala Ser
        35   40   45
Thr Val Asp Cys Asn Asp Leu Gly Leu Leu Thr Phe Pro Ala Arg Leu
    50   55   60
Pro Ala Asn Thr Gln Ile Leu Leu Leu Gln Thr Asn Asn Ile Ala Lys
65   70   75   80
Ile Glu Tyr Ser Thr Asp Phe Pro Val Asn Leu Thr Gly Leu Asp Leu
                85   90   95
Ser Gln Asn Asn Leu Ser Ser Val Thr Asn Ile Asn Val Lys Lys Met
            100   105   110
Pro Gln Leu Leu Ser Val Tyr Leu Glu Glu Asn Lys Leu Thr Glu Leu
        115   120   125
Pro Glu Lys Cys Leu Ser Glu Leu Ser Asn Leu Gln Glu Leu Tyr Ile
        130   135   140
Asn His Asn Leu Leu Ser Thr Ile Ser Pro Gly Ala Phe Ile Gly Leu
145   150   155   160
His Asn Leu Leu Arg Leu His Leu Asn Ser Asn Arg Leu Gln Met Ile
                165   170   175
Asn Ser Lys Trp Phe Asp Ala Leu Pro Asn Leu Glu Ile Leu Met Ile
            180   185   190
Gly Glu Asn Pro Ile Ile Arg Ile Lys Asp Met Asn Phe Lys Pro Leu
        195   200   205
Ile Asn Leu Arg Ser Leu Val Ile Ala Gly Ile Asn Leu Thr Glu Ile
        210   215   220
Pro Asp Asn Ala Leu Val Gly Leu Glu Asn Leu Glu Ser Ile Ser Phe
225   230   235   240
Tyr Asp Asn Arg Leu Ile Lys Val Pro His Val Ala Leu Gln Lys Val
            245   250   255
Val Asn Leu Lys Phe Leu Asp Leu Asn Lys Asn Pro Ile Asn Arg Ile
            260   265   270
Arg Arg Gly Asp Phe Ser Asn Met Leu His Leu Lys Glu Leu Gly Ile
        275   280   285
Asn Asn Met Pro Glu Leu Ile Ser Ile Asp Ser Leu Ala Val Asp Asn
        290   295   300
Leu Pro Asp Leu Arg Lys Ile Glu Ala Thr Asn Asn Pro Arg Leu Ser
305   310   315   320
Tyr Ile His Pro Asn Ala Phe Phe Arg Leu Pro Lys Leu Glu Ser Leu
            325   330   335
Met Leu Asn Ser Asn Ala Leu Ser Ala Leu Tyr His Gly Thr Ile Glu

```
              340                    345                    350
Ser Leu Pro Asn Leu Lys Glu Ile Ser Ile His Ser Asn Pro Ile Arg
         355                    360                    365
Cys Asp Cys Val Ile Arg Trp Met Asn Met Asn Lys Thr Asn Ile Arg
     370                    375                    380
Phe Met Glu Pro Asp Ser Leu Phe Cys Val Asp Pro Pro Glu Phe Gln
385                    390                    395                    400
Gly Gln Asn Val Arg Gln Val His Phe Arg Asp Met Met Glu Ile Cys
                   405                    410                    415
Leu Pro Leu Ile Ala Pro Glu Ser Phe Pro Ser Asn Leu Asn Val Glu
                   420                    425                    430
Ala Gly Ser Tyr Val Ser Phe His Cys Arg Ala Thr Ala Glu Pro Gln
         435                    440                    445
Pro Glu Ile Tyr Trp Ile Thr Pro Ser Gly Gln Lys Leu Leu Pro Asn
     450                    455                    460
Thr Leu Thr Asp Lys Phe Tyr Val His Ser Glu Gly Thr Leu Asp Ile
465                    470                    475                    480
Asn Gly Val Thr Pro Lys Glu Gly Gly Leu Tyr Thr Cys Ile Ala Thr
                   485                    490                    495
Asn Leu Val Gly Ala Asp Leu Lys Ser Val Met Ile Lys Val Asp Gly
         500                    505                    510
Ser Phe Pro Gln Asp Asn Asn Gly Ser Leu Asn Ile Lys Ile Arg Asp
     515                    520                    525
Ile Gln Ala Asn Ser Val Leu Val Ser Trp Lys Ala Ser Ser Lys Ile
     530                    535                    540
Leu Lys Ser Ser Val Lys Trp Thr Ala Phe Val Lys Thr Glu Asn Ser
545                    550                    555                    560
His Ala Ala Gln Ser Ala Arg Ile Pro Ser Asp Val Lys Val Tyr Asn
                   565                    570                    575
Leu Thr His Leu Asn Pro Ser Thr Glu Tyr Lys Ile Cys Ile Asp Ile
              580                    585                    590
Pro Thr Ile Tyr Gln Lys Asn Arg Lys Lys Cys Val Asn Val Thr Thr
         595                    600                    605
Lys Gly Leu His Pro Asp Gln Lys Glu Tyr Glu Lys Asn Asn Thr Thr
     610                    615                    620
Thr Leu Met Ala Cys Leu Gly Gly Leu Leu Gly Ile Ile Gly Val Ile
625                    630                    635                    640
Cys Leu Ile Ser Cys Leu Ser Pro Glu Met Asn Cys Asp Gly Gly His
              645                    650                    655
Ser Tyr Val Arg Asn Tyr Leu Gln Lys Pro Thr Phe Ala Leu Gly Glu
         660                    665                    670
Leu Tyr Pro Pro Leu Ile Asn Leu Trp Glu Ala Gly Lys Glu Lys Ser
     675                    680                    685
Thr Ser Leu Lys Val Lys Ala Thr Val Ile Gly Leu Pro Thr Asn Met
     690                    695                    700
Ser
705
```

<210> 4555
<211> 1128
<212> DNA
<213> Homo sapiens

<400> 4555

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120
tggcccacct gggtggggagg ctgccaccgc ggcctgatca tgccctctgt gcccacacag
180
gtctctgagc ggcccctgat gttcctgttg gacactcctg gcgtgctggc tcctcggatt
240
gaaagtgtgg agacaggcct gaagctggcc ctgtgtggaa cggtgctgga ccacctggtc
300
ggggaggaga ccatggctga ctacctgctg tacaccctca acaaacacca gcgctttggg
360
tgagtgcagc actacggcct gggcagtgcc tgtgacaacg tagagcgcgt gctgaagagt
420
gtggctgtga agctggggaa gacgcagaag gtgaaggtgc tcacgggcac gggtaacgtg
480
aacgttattc agcctaacta tcctgcggca gcccgtgact tcctgcagac tttccgccgt
540
gggctgctgg gttccgtgat gctggacctc gacgtcctgc ggggccaccc cccggctgag
600
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tgacctgggt ggttgaggct caagacagct cacccggtcc agaagctcca tgctggtcac
720
tagggtgctg tgctctctgg cgccccacag cctggccagc tccagggacc ccagttgcag
780
ggcccaagca ggtgggagtg gacaccaggc ttcccagtgg acgtccctga gcagctccgc
840
atgcttggtt ctcccggagc ttcctgctca ggcctcttga gaaatggatg ctgtctcaga
900
aggagttaaa gctataacct gtaacctta aaatctccag ttaaagggcc tgtttcttac
960
tggcctgtga ggtgcaccgt agtgccttgg gcctgtgtgt aaagctgct ctcaccagtg
1020
gaacctaaga aatgagcagg ttggcagcta gggtttgtgt tggaggcttt cggtccagtg
1080
tcttgcagtc ctacaacaag tgagagcttg ctgccaaaaa aaaaaaaa
1128
```

<210> 4556
<211> 67
<212> PRT
<213> Homo sapiens

<400> 4556
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Met Pro Ser Val Pro Thr Gln Val Ser Glu Arg Pro Leu Met Phe Leu
1               5                   10                  15
Leu Asp Thr Pro Gly Val Leu Ala Pro Arg Ile Glu Ser Val Glu Thr
            20                  25                  30
Gly Leu Lys Leu Ala Leu Cys Gly Thr Val Leu Asp His Leu Val Gly
        35                  40                  45
Glu Glu Thr Met Ala Asp Tyr Leu Leu Tyr Thr Leu Asn Lys His Gln
    50                  55                  60
Arg Phe Gly
```

65

<210> 4557
<211> 446
<212> DNA
<213> Homo sapiens

<400> 4557
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gcctgtccct ctcctctcct cacccctgct cccagcaagg ccgtccgttg tgcccaagac
120
catctaggac attctcatcc ccctgagacc tcaagggcct tcctgcctcc tccctcagac
180
gtgagggtga gatcctgcct ctaccattgg agcgccacag cccacctgcc tcctctgtca
240
aaaaaacctc cttgtaccat ctctcacttg agacctctgc taggcctgcc tcctccatct
300
gacctccaca tcccatcagc agccaccctg ggcccctgca tgcactggcc tcctccctca
360
gacgctcctt gcaccatatc acttgcatta gacgctctcc taggcctgcc tcccccctca
420
gaccaccaca tcacatctac acgcgt
446

<210> 4558
<211> 148
<212> PRT
<213> Homo sapiens

<400> 4558
Xaa Arg Val His Arg Lys Arg Cys Gln Asp Ser Leu Gly Ser Pro Arg
1   5   10   15
Arg Ala Gly Met Ala Cys Pro Ser Pro Leu Leu Thr Pro Ala Pro Ser
            20   25   30
Lys Ala Val Arg Cys Ala Gln Asp His Leu Gly His Ser His Pro Pro
            35   40   45
Glu Thr Ser Arg Ala Phe Leu Pro Pro Pro Ser Asp Val Arg Val Arg
        50   55   60
Ser Cys Leu Tyr His Trp Ser Ala Thr Ala His Leu Pro Pro Leu Ser
65   70   75   80
Lys Lys Pro Pro Cys Thr Ile Ser His Leu Arg Pro Leu Leu Gly Leu
                85   90   95
Pro Pro Pro Ser Asp Leu His Ile Pro Ser Ala Ala Thr Leu Gly Pro
                100   105   110
Cys Met His Trp Pro Pro Pro Ser Asp Ala Pro Cys Thr Ile Ser Leu
        115   120   125
Ala Leu Asp Ala Leu Leu Gly Leu Pro Pro Pro Ser Asp His His Ile
130   135   140
Thr Ser Thr Arg
145

<210> 4559
<211> 919

<212> DNA
<213> Homo sapiens

<400> 4559
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120
gctcctgtcc cctaggattg acaaaccaag ggctcagggc tcagctgtgt gccacgcagc
180
ggctgctgtg aggtgtgttc tggtagaagg ggtcagctga ggtcagggtt cttcccacgt
240
ggggatgcag gtgccgcagg ctctccatgg ggttgggggt ggcctccatg cagctgaccg
300
gctggctgag ggcgtagcct cctggcatct ggggctggat gccacctcga gtccagcctt
360
cctggtctag acccttgggg atgttctcaa agtacccttg gttgtaggtg gtcaggtatc
420
gctgatccct gtcaggatca caggggctcc ggacatacat ggggttgtta aggctgaacc
480
ctgtgggctc ctttttcccc acagtctccc ggccaagcag ggcaacgttt gtctgttgca
540
tccgatgaag tggctgaaac tgctggtgac tcacgctgct gggttctggg cagggagggg
600
gcactctggg gttcagaatc ctttcattcc ctcggctgaa ggctgtttcc cgcttggagc
660
ctctggccaa cacaggtagg aactcatctc catgtaggtg agtcttgggg aggaagtctg
720
acttggtgac actctggcct gggaggaggg cagggtcccc cagggagggc ctgtgagggc
780
ggttggaaga caatggggct ctggtgggac tgtttggtga agccactccc ctcctttgcg
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ccgatcgatt tcttctgcaa gaaatctggc tggtctagag ggtccctgag atacttggaa
900
ttgtactccg acgtcatga
919

<210> 4560
<211> 126
<212> PRT
<213> Homo sapiens

<400> 4560
Met Gln Gln Thr Asn Val Ala Leu Leu Gly Arg Glu Thr Val Gly Lys
1   5   10   15
Lys Glu Pro Thr Gly Phe Ser Leu Asn Asn Pro Met Tyr Val Arg Ser
            20   25   30
Pro Cys Asp Pro Asp Arg Asp Gln Arg Tyr Leu Thr Thr Tyr Asn Gln
        35   40   45
Gly Tyr Phe Glu Asn Ile Pro Lys Gly Leu Asp Gln Glu Gly Trp Thr
    50   55   60
Arg Gly Gly Ile Gln Pro Gln Met Pro Gly Gly Tyr Ala Leu Ser Gln
65   70   75   80
Pro Val Ser Cys Met Glu Ala Thr Pro Asn Pro Met Glu Ser Leu Arg

```
                    85                    90                    95
His Leu His Pro His Val Gly Arg Thr Leu Thr Ser Ala Asp Pro Phe
            100                   105                   110
Tyr Gln Asn Thr Pro His Ser Ser Arg Cys Val Ala His Ser
        115                   120                   125
```

<210> 4561
<211> 4172
<212> DNA
<213> Homo sapiens

<400> 4561
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gatcgcgccc gtccgcattc gccgacgtct ccactgctga gcaaaagcca cccgaggctg
120
gcgacagtgt cttgccgggg agtagtagcc gggctggtaa ctggagtttg agattaggag
180
actttcagac ccttgtgcac aaagagcagg atgaagttaa aggaagtaga tcgtacagcc
240
atgcaggcat ggagccctgc ccagaatcac cccatttacc tagcaacagg aacatctgct
300
cagcaattgg atgcaacatt tagtacgaat gcttcccttg agatatttga attagacctc
360
tctgatccat ccttggatat gaaatcttgt gccacattct cctcttctca caggtaccac
420
aagttgattt gggggcctta taaaatggat tccaaaggag atgtctctgg agttctgatt
480
gcaggtggtg aaaatggaaa tattattctc tatgatcctt ctaaaattat agctggagac
540
aaggaagttg tgattgccca gaatgacaag catactggcc cagtgagagc cttggatgtg
600
aacattttcc agactaatct ggtagcttct ggtgctaatg aatctgaaat ctacatatgg
660
gatctaaata attttgcaac cccaatgaca ccaggagcca aaacacagcc gccagaagat
720
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780
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840
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900
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960
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1020
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1080
aacacaggag aggtgttata tgaacttccc accaacacac agtggtgctt cgatattcag
1140
tggtgtcccc gaaatcctgc tgtcttatca gctgcttcgt ttgatgggcg tatcagtgtt
1200
tattctatca tgggaggaag cacagatggt ttaagacaga aacaagttga caagctttca
1260
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tcatcttttg ggaatcttga tccctttggc acaggacagc cccttcctcc gttacaaatt
1320
ccacagcaga ctgctcagca tagtatagtg ctgcctctga agaagccgcc caagtggatt
1380
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1440
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1500
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1560
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1620
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1680
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1740
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1800
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1860
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1920
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1980
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2100
tgtgatcttt tgggaaccag gcttgaaaat gaaggagata gcctcctgca gactcaagca
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2220
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2280
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2460
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2520
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2640
gttaatccaa atgctgctgg tcagcttccc acatctccag gtcatatgca cacccaggta
2700
ccaccttatc cacagccaca gccttatcaa ccagcccagc cgtatccctt cggaacaggg
2760
gggtcagcaa tgtatcgacc tcagcagcct gttgctcctc ctacttcaaa cgcttaccct
2820
aacacccctt acatatcttc tgcttcttcc tatactgggc agtctcagct gtacgcagca
2880
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cagcaccagg cctcttcacc tacctccagc cctgctactt ctttccctcc tcccccttcc
2940
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3060
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3480
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3540
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3600
ggtttacaca acattgcaag gagcattgaa actcgaaact actcagaagg attgaccatg
3660
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3720
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caatattgcc atttttccaa agaaacatgt taaaaaaaaa aattataaga catggactag
3840
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3900
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4080
catctggtta tgcataaagc agagctaaaa ctaaatttct ttcatgtcct ccctacttcc
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4172
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```
<210> 4562
<211> 1182
<212> PRT
<213> Homo sapiens

<400> 4562
Met Lys Leu Lys Glu Val Asp Arg Thr Ala Met Gln Ala Trp Ser Pro
1               5                   10                  15
Ala Gln Asn His Pro Ile Tyr Leu Ala Thr Gly Thr Ser Ala Gln Gln
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                    20                    25                    30
   Leu Asp Ala Thr Phe Ser Thr Asn Ala Ser Leu Glu Ile Phe Glu Leu
          35                    40                    45
   Asp Leu Ser Asp Pro Ser Leu Asp Met Lys Ser Cys Ala Thr Phe Ser
      50                    55                    60
   Ser Ser His Arg Tyr His Lys Leu Ile Trp Gly Pro Tyr Lys Met Asp
   65                    70                    75                    80
   Ser Lys Gly Asp Val Ser Gly Val Leu Ile Ala Gly Gly Glu Asn Gly
                 85                    90                    95
   Asn Ile Ile Leu Tyr Asp Pro Ser Lys Ile Ile Ala Gly Asp Lys Glu
                100                   105                   110
   Val Val Ile Ala Gln Asn Asp Lys His Thr Gly Pro Val Arg Ala Leu
             115                   120                   125
   Asp Val Asn Ile Phe Gln Thr Asn Leu Val Ala Ser Gly Ala Asn Glu
      130                   135                   140
   Ser Glu Ile Tyr Ile Trp Asp Leu Asn Asn Phe Ala Thr Pro Met Thr
   145                   150                   155                   160
   Pro Gly Ala Lys Thr Gln Pro Pro Glu Asp Ile Ser Cys Ile Ala Trp
                165                   170                   175
   Asn Arg Gln Val Gln His Ile Leu Ala Ser Ala Ser Pro Ser Gly Arg
                180                   185                   190
   Ala Thr Val Trp Asp Leu Arg Glu Asn Glu Pro Ile Ile Lys Val Ser
             195                   200                   205
   Asp His Ser Asn Arg Met His Cys Ser Gly Leu Ala Trp His Pro Asp
      210                   215                   220
   Val Ala Thr Gln Met Val Leu Ala Ser Glu Asp Asp Arg Leu Pro Val
   225                   230                   235                   240
   Ile Gln Met Trp Asp Leu Arg Phe Ala Ser Ser Pro Leu Arg Val Leu
                245                   250                   255
   Glu Asn His Ala Arg Gly Ile Leu Ala Ile Ala Trp Ser Met Ala Asp
                260                   265                   270
   Pro Glu Leu Leu Leu Ser Cys Gly Lys Asp Ala Lys Ile Leu Cys Ser
             275                   280                   285
   Asn Pro Asn Thr Gly Glu Val Leu Tyr Glu Leu Pro Thr Asn Thr Gln
      290                   295                   300
   Trp Cys Phe Asp Ile Gln Trp Cys Pro Arg Asn Pro Ala Val Leu Ser
   305                   310                   315                   320
   Ala Ala Ser Phe Asp Gly Arg Ile Ser Val Tyr Ser Ile Met Gly Gly
             325                   330                   335
   Ser Thr Asp Gly Leu Arg Gln Lys Gln Val Asp Lys Leu Ser Ser Ser
             340                   345                   350
   Phe Gly Asn Leu Asp Pro Phe Gly Thr Gly Gln Pro Leu Pro Pro Leu
             355                   360                   365
   Gln Ile Pro Gln Gln Thr Ala Gln His Ser Ile Val Leu Pro Leu Lys
      370                   375                   380
   Lys Pro Pro Lys Trp Ile Arg Arg Pro Val Gly Ala Ser Phe Ser Phe
   385                   390                   395                   400
   Gly Gly Lys Leu Val Thr Phe Glu Asn Val Arg Met Pro Ser His Gln
             405                   410                   415
   Gly Ala Glu Gln Gln Gln Gln Gln His His Val Phe Ile Ser Gln Val
             420                   425                   430
   Val Thr Glu Lys Glu Phe Leu Ser Arg Ser Asp Gln Leu Gln Gln Ala
      435                   440                   445
   Val Gln Ser Gln Gly Phe Ile Asn Tyr Cys Gln Lys Lys Ile Asp Ala
```

```
         450                      455                      460
Ser Gln Thr Glu Phe Glu Lys Asn Val Trp Ser Phe Leu Lys Val Asn
465                      470                      475                      480
Phe Glu Asp Asp Ser Arg Gly Lys Tyr Leu Glu Leu Leu Gly Tyr Arg
                  485                      490                      495
Lys Glu Asp Leu Glu Lys Xaa Gln Asp Ile Lys Glu Glu Lys Glu Glu
             500                      505                      510
Ser Glu Phe Leu Pro Ser Ser Gly Gly Thr Phe Asn Ile Ser Val Ser
             515                      520                      525
Gly Asp Ile Asp Gly Leu Ile Thr Gln Ala Leu Leu Thr Gly Asn Phe
        530                      535                      540
Glu Ser Ala Val Asp Leu Cys Leu His Asp Asn Arg Met Ala Asp Ala
545                      550                      555                      560
Ile Ile Leu Ala Ile Ala Gly Gly Gln Glu Leu Leu Ala Arg Thr Gln
                  565                      570                      575
Lys Lys Tyr Phe Ala Lys Ser Gln Ser Lys Ile Thr Arg Leu Ile Thr
                  580                      585                      590
Ala Val Val Met Lys Asn Trp Lys Glu Ile Val Glu Ser Cys Asp Leu
             595                      600                      605
Lys Asn Trp Arg Glu Ala Leu Ala Ala Val Leu Thr Tyr Ala Lys Pro
        610                      615                      620
Asp Glu Phe Ser Ala Leu Cys Asp Leu Leu Gly Thr Arg Leu Glu Asn
625                      630                      635                      640
Glu Gly Asp Ser Leu Leu Gln Thr Gln Ala Cys Leu Cys Tyr Ile Cys
                  645                      650                      655
Ala Gly Asn Val Glu Lys Leu Val Ala Cys Trp Thr Lys Ala Gln Asp
                  660                      665                      670
Gly Ser His Pro Leu Ser Leu Gln Asp Leu Ile Glu Lys Val Val Ile
             675                      680                      685
Leu Arg Lys Ala Val Gln Leu Thr Gln Ala Met Asp Thr Ser Thr Val
        690                      695                      700
Gly Val Leu Leu Ala Ala Lys Met Ser Gln Tyr Ala Asn Leu Leu Ala
705                      710                      715                      720
Ala Gln Gly Ser Ile Ala Ala Ala Leu Ala Phe Leu Pro Asp Asn Thr
                  725                      730                      735
Asn Gln Pro Asn Ile Met Gln Leu Arg Asp Arg Leu Cys Arg Ala Gln
                  740                      745                      750
Gly Glu Pro Val Ala Gly His Glu Ser Pro Lys Ile Pro Tyr Glu Lys
             755                      760                      765
Gln Gln Leu Pro Lys Gly Arg Pro Gly Pro Val Ala Gly His His Gln
        770                      775                      780
Met Pro Arg Val Gln Thr Gln Gln Tyr Tyr Pro His Gly Glu Asn Pro
785                      790                      795                      800
Pro Pro Pro Gly Phe Ile Met His Gly Asn Val Asn Pro Asn Ala Ala
                  805                      810                      815
Gly Gln Leu Pro Thr Ser Pro Gly His Met His Thr Gln Val Pro Pro
             820                      825                      830
Tyr Pro Gln Pro Gln Pro Tyr Gln Pro Ala Gln Pro Tyr Pro Phe Gly
             835                      840                      845
Thr Gly Gly Ser Ala Met Tyr Arg Pro Gln Gln Pro Val Ala Pro Pro
        850                      855                      860
Thr Ser Asn Ala Tyr Pro Asn Thr Pro Tyr Ile Ser Ser Ala Ser Ser
865                      870                      875                      880
Tyr Thr Gly Gln Ser Gln Leu Tyr Ala Ala Gln His Gln Ala Ser Ser
```

```
                    885                 890                895
Pro Thr Ser Ser Pro Ala Thr Ser Phe Pro Pro Pro Ser Ser Gly
                900                 905                910
Ala Ser Phe Gln His Gly Gly Pro Gly Ala Pro Pro Ser Ser Ser Ala
        915                 920                925
Tyr Ala Leu Pro Pro Gly Thr Thr Gly Thr Leu Pro Ala Ala Ser Glu
    930                 935                940
Leu Pro Ala Ser Gln Arg Thr Gly Pro Gln Asn Gly Trp Asn Asp Pro
945                 950                955                960
Pro Ala Leu Asn Arg Val Pro Lys Lys Lys Lys Met Pro Glu Asn Phe
                965                 970                975
Met Pro Pro Val Pro Ile Thr Ser Pro Ile Met Asn Pro Leu Gly Asp
                980                 985                990
Pro Gln Ser Gln Met Leu Gln Gln Gln Pro Ser Ala Pro Val Pro Leu
        995                 1000               1005
Ser Ser Gln Ser Ser Phe Pro Gln Pro His Leu Pro Gly Gly Gln Pro
    1010                1015               1020
Phe His Gly Val Gln Gln Pro Leu Gly Gln Thr Gly Met Pro Pro Ser
1025                1030                1035               1040
Phe Ser Lys Pro Asn Ile Glu Gly Ala Pro Gly Ala Pro Ile Gly Asn
                1045                1050               1055
Thr Phe Gln His Val Gln Ser Leu Pro Thr Lys Lys Ile Thr Lys Lys
        1060                1065               1070
Pro Ile Pro Asp Glu His Leu Ile Leu Lys Thr Thr Phe Glu Asp Leu
        1075                1080               1085
Ile Gln Arg Cys Leu Ser Ser Ala Thr Asp Pro Gln Thr Lys Arg Lys
    1090                1095               1100
Leu Asp Asp Ala Ser Lys Arg Leu Glu Phe Leu Tyr Asp Lys Leu Arg
1105                1110                1115               1120
Glu Gln Thr Leu Ser Pro Thr Ile Thr Ser Gly Leu His Asn Ile Ala
                1125                1130               1135
Arg Ser Ile Glu Thr Arg Asn Tyr Ser Glu Gly Leu Thr Met His Thr
            1140                1145               1150
His Ile Val Ser Thr Ser Asn Phe Ser Glu Thr Ser Ala Phe Met Pro
        1155                1160               1165
Val Leu Lys Val Val Leu Thr Gln Ala Asn Lys Leu Gly Val
    1170                1175               1180
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<210> 4563
<211> 2037
<212> DNA
<213> Homo sapiens

<400> 4563
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cggtaccgct gcagccaccg cggccccccgg ctgggtttgg aggatttggg acaacatcta
120
caactgcagg ttctgcattc agcttttctg ccccaactaa cacaggcact actggactct
180
ttggtggtac tcagaacaaa ggttttggat ttggtactgg ttttggcaca acaacgggaa
240
ctagtactgg tttaggtact ggtttgggaa ctggactggg atttggagga tttaatacac
300

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agcagcagca gcaaactagc agtaggttat agttgcatgc ccagtaataa agatgaagat
360
gggctagtgg ttttagtttt caacaaaaaa gaaacagaga ttcgaagcca acaacaacag
420
ttggtagaat cattgcataa agttttggga ggaaaccaga cccttactgt aaatgtagag
480
ggcactaaaa cattgccaga tgatcagaca gaagttgtta tttatgttgt tgagcgttcg
540
ccaaatggta cttcaagaag agttccagct acaacgctat atgcccattt tgaacaagcc
600
aatataaaaa cacaattgca gcaacttggt gtaacccttt ctatgactag aacagaactt
660
tctcctgcac agatcagaca gcttttacag aatcctcctg ctggtgttga tcctattatc
720
tgggaacagg ccaaggtaga taaccctgat tctgaaaagt taattcctgt accaatggtg
780
ggttttaagg aacttctccg aagactgaag gttcaagatc agatgactaa gcagcatcaa
840
accagattag atatcatatc tgaagatatt agtgagctac aaaagaatca aactacatct
900
gtagccaaaa ttgcacaata caagaggaaa ctcatggatc tttcccatag aactttacag
960
gtcctaatca aacaggaaat tcaaaggaag agtggttatg ccattcaggc tgatgaagag
1020
cagttgcgag ttcagctgga tacgattcag ggtgaactaa atgcacctac tcagttcaag
1080
ggccgactaa atgaattgat gtctcaaatc aggatgcaga atcattttgg agcagtcaga
1140
tctgaagaaa ggtattacat agatgcagat ctgttacgag aaatcaagca gcatttgaaa
1200
caacaacagg aaggccttag ccatttgatt agcatcatta aagacgatct agaagatata
1260
aagctggtcg aacatggatt gaatgaaacc atccacatca gaggtggtgt ctttagttga
1320
cagttcacaa acttgtgtaa aggtttgtga aatgcatctt cttactgcat cagaccttcc
1380
ttaagaatga aaccgaccac atggagggaa aaagaaaaca attctttctt ggattggttt
1440
tttgagaagt ttactgacaa attactgttc atcaaatctg aaatagtcac ctcacagctc
1500
ttcaaagaaa acctttgaaa gatttatatc taaaagctgt atttacttta aaagaagtgc
1560
ataattacca aaattgtatg tactattgta catttttaca acagcatttt cttaaacata
1620
atctgtgttt aatgattatt gtccattgag cctgtactct gctttccata ccaagtaaat
1680
atgaaataat ctactttgca cataacagaa gaaactataa ttacttggct gttggagatt
1740
tgtacttgag tataaatgta caccagtttt tgtatttgtg aactcatctg tgggaggagt
1800
aaagaaaatc caaaagcatt taatgttttg tttttgttct ataaagatat gaaaatgtat
1860
ttttatatta ttttacttat ttggaattta cagagcacac ctaagcaatt aggatataac
1920
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aaaactactt aaccatttt gcaaccattt tgttttttaa gccttttat ttctaaaaag
1980
atgaaaactt ataaataaat tcttaatttg taattacttt taaaaaaaaa aaaaaaa
2037

<210> 4564
<211> 354
<212> PRT
<213> Homo sapiens

<400> 4564
Val Leu Val Trp Glu Leu Asp Trp Asp Leu Glu Asp Leu Ile His Ser
1   5   10   15
Ser Ser Ser Lys Leu Ala Val Gly Tyr Ser Cys Met Pro Ser Asn Lys
            20   25   30
Asp Glu Asp Gly Leu Val Val Leu Val Phe Asn Lys Lys Glu Thr Glu
        35   40   45
Ile Arg Ser Gln Gln Gln Gln Leu Val Glu Ser Leu His Lys Val Leu
    50   55   60
Gly Gly Asn Gln Thr Leu Thr Val Asn Val Glu Gly Thr Lys Thr Leu
65   70   75   80
Pro Asp Asp Gln Thr Glu Val Val Ile Tyr Val Val Glu Arg Ser Pro
                85   90   95
Asn Gly Thr Ser Arg Arg Val Pro Ala Thr Thr Leu Tyr Ala His Phe
            100   105   110
Glu Gln Ala Asn Ile Lys Thr Gln Leu Gln Gln Leu Gly Val Thr Leu
        115   120   125
Ser Met Thr Arg Thr Glu Leu Ser Pro Ala Gln Ile Arg Gln Leu Leu
    130   135   140
Gln Asn Pro Pro Ala Gly Val Asp Pro Ile Ile Trp Glu Gln Ala Lys
145   150   155   160
Val Asp Asn Pro Asp Ser Glu Lys Leu Ile Pro Val Pro Met Val Gly
                165   170   175
Phe Lys Glu Leu Leu Arg Arg Leu Lys Val Gln Asp Gln Met Thr Lys
            180   185   190
Gln His Gln Thr Arg Leu Asp Ile Ile Ser Glu Asp Ile Ser Glu Leu
        195   200   205
Gln Lys Asn Gln Thr Thr Ser Val Ala Lys Ile Ala Gln Tyr Lys Arg
    210   215   220
Lys Leu Met Asp Leu Ser His Arg Thr Leu Gln Val Leu Ile Lys Gln
225   230   235   240
Glu Ile Gln Arg Lys Ser Gly Tyr Ala Ile Gln Ala Asp Glu Glu Gln
            245   250   255
Leu Arg Val Gln Leu Asp Thr Ile Gln Gly Glu Leu Asn Ala Pro Thr
            260   265   270
Gln Phe Lys Gly Arg Leu Asn Glu Leu Met Ser Gln Ile Arg Met Gln
        275   280   285
Asn His Phe Gly Ala Val Arg Ser Glu Glu Arg Tyr Tyr Ile Asp Ala
    290   295   300
Asp Leu Leu Arg Glu Ile Lys Gln His Leu Lys Gln Gln Gln Glu Gly
305   310   315   320
Leu Ser His Leu Ile Ser Ile Ile Lys Asp Asp Leu Glu Asp Ile Lys
                325   330   335
Leu Val Glu His Gly Leu Asn Glu Thr Ile His Ile Arg Gly Gly Val

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                340              345              350
Phe Ser


<210> 4565
<211> 2344
<212> DNA
<213> Homo sapiens

<400> 4565
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agtgccattg agctcaccaa aatgttctgt gaaatcctgc aggttgggga actaccaaat
120
gaaggacgca atgactacca cccgatgttc tttacccatg accgagcctt tgaagagctc
180
tttggaatct gcatccagct gttgaacaag acctggaagg agatgagggc aacagcagag
240
gacttcaaca aggttatgca agtcgtccga gagcaaatca ctcgagcttt gccctccaaa
300
cccaactctt tggatcagtt caagagcaaa ttgcgtagcc tgagttactc tgagattcta
360
cgactgcgcc agtctgagag gatgagtcag gatgacttcc agtccccgcc aattgtggag
420
ctgagggaga agatccagcc cgagatcctt gagctgatca agcagcagcg cctgaaccgg
480
ctctgtgagg gcagcagctt ccgaaagatt gggaaccgcc gaaggcaaga acggttctgg
540
tactccggt tggcactgaa ccacaaggtc cttcactatg gtgacttgga tgacaaccca
600
caaggggagg tgacatttga atccctgcag gagaaaattc ctgttgcaga cattaaggcc
660
attgtcactg ggaaagattg tccccacatg aaagagaaaa gtgctctgaa acagaacaag
720
gaggtgttgg aattggcctt ctccatcctg tatgaccctg atgagacctt aaacttcatc
780
gcacctaata aatatgagta ctgcatctgg attgacggcc tcagtgccct tctggggaag
840
gacatgtcca gtgagctgac caagagtgac ctggacaccc tgctgagcat ggagatgaag
900
ctgcggctcc tggacctgga aacatccag attcccgaag ccccaccccc catccccaag
960
gagcccagca gctatgactt tgtctatcac tatggctgag cctggagcca gaaacgacgg
1020
tacccaggag aagggatttt gggcccagga gaaacactta cattctggtg ccttgtcttt
1080
tgcttgtaca gaatctgtag tgattttggt ggccagtaaa tgccagccat ttctcaaacc
1140
cacctcggac cacccagagt ttcctcttgg tccctgtcta ctaagagtca tgaaggcagg
1200
gtgctctgcc cactccatca ccatgaagcc tgggattggg ccacgaggaa caaacagcag
1260
atgcccttgc cttccagtcc aagaaactgc ttcttgaaat ggatttaaca acagccactc
1320
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accttttcct cctgagcctg ctctctgatc agctggatcc ccacgtgagc aacagctggc
1380
ccaggaaagg ctgcctgcag aggacaggtg tgttgggcgt gttgagagcc ttgaagtgac
1440
tacctgtatc ttagatctga gtacaagcct gaggcttttg cttttgtctt ttttgatgag
1500
ggctcactcc agcttcatat ggtgccaaga cgttgctgct tctgaggttg gctctaacat
1560
ctctggtctt tagagccacc agatctctct ggcccataca gatatcagag cagacggaaa
1620
tttctccctg caagcgctca gtctcatccc agcaagtcaa agacctcctg gccaagtcct
1680
gccctcttaa gtctccagga acgctgcagg gaaaacccag ctgaggcctg ggcctagact
1740
gtggtgaggt cactagattc tactgctctt cccccacatt aatacctttt ccttcctcag
1800
agagaaatct cccctaacct gaattgcagc cccctccagt ttgctttcct ttggccttcc
1860
agaccccagg aagttggcct tcccttccta gtgctatggt ttctgccatt ggccatgatt
1920
tcagggagct ggctgaggcc ggctgaggcc acacctgtgc cagtggggct tccctggtgc
1980
tgcagcactt gtaaaccaca cacacagcct ctctccctgg acatacgtta gcacattggc
2040
attcagtatt ggtggcctgg catggtaggt actacccaat gaagagtgta ctatatattt
2100
tcattactat aggccatact tatacagacg tgtatatata tttatataag atctacctat
2160
cttaggatgg aaccttgggg aaaaataaaa ttgaggggaa gtaaaaagta tgtaacactt
2220
ccagttgtga gccaagattg taaccagaga gcagccagga gcttcctgtc agtaaccatg
2280
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2340
aaaa
2344
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<210> 4566
<211> 247
<212> PRT
<213> Homo sapiens
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<400> 4566
Met Gln Val Val Arg Glu Gln Ile Thr Arg Ala Leu Pro Ser Lys Pro
 1               5                   10                  15
Asn Ser Leu Asp Gln Phe Lys Ser Lys Leu Arg Ser Leu Ser Tyr Ser
            20                  25                  30
Glu Ile Leu Arg Leu Arg Gln Ser Glu Arg Met Ser Gln Asp Asp Phe
        35                  40                  45
Gln Ser Pro Pro Ile Val Glu Leu Arg Glu Lys Ile Gln Pro Glu Ile
    50                  55                  60
Leu Glu Leu Ile Lys Gln Gln Arg Leu Asn Arg Leu Cys Glu Gly Ser
65                  70                  75                  80
Ser Phe Arg Lys Ile Gly Asn Arg Arg Arg Gln Glu Arg Phe Trp Tyr
```

```
                        85                      90                      95
     Cys Arg Leu Ala Leu Asn His Lys Val Leu His Tyr Gly Asp Leu Asp
                    100                     105                     110
     Asp Asn Pro Gln Gly Glu Val Thr Phe Glu Ser Leu Gln Glu Lys Ile
                115                     120                     125
     Pro Val Ala Asp Ile Lys Ala Ile Val Thr Gly Lys Asp Cys Pro His
          130                     135                     140
     Met Lys Glu Lys Ser Ala Leu Lys Gln Asn Lys Glu Val Leu Glu Leu
     145                     150                     155                     160
     Ala Phe Ser Ile Leu Tyr Asp Pro Asp Glu Thr Leu Asn Phe Ile Ala
                    165                     170                     175
     Pro Asn Lys Tyr Glu Tyr Cys Ile Trp Ile Asp Gly Leu Ser Ala Leu
                180                     185                     190
     Leu Gly Lys Asp Met Ser Ser Glu Leu Thr Lys Ser Asp Leu Asp Thr
                195                     200                     205
     Leu Leu Ser Met Glu Met Lys Leu Arg Leu Leu Asp Leu Glu Asn Ile
          210                     215                     220
     Gln Ile Pro Glu Ala Pro Pro Pro Ile Pro Lys Glu Pro Ser Ser Tyr
     225                     230                     235                     240
     Asp Phe Val Tyr His Tyr Gly
                    245


     <210> 4567
     <211> 1211
     <212> DNA
     <213> Homo sapiens


     <400> 4567
     gcggccgcct ccgcgatgcc gctgctcgtc gaggggcggc gagtgcggct gccgcagtca
     60
     gccggggacc tcgtccgagc ccacccgcct ttggaggaaa gagccagact tctcagaggt
     120
     cagtctgttc aacaagtggg accccagggc cttctgtatg ttcagcaaag agagcttgca
     180
     gtgacctccc caaaggatgg ctccatctcc attctgggtt ctgatgatgc cactacttgt
     240
     cacattgtgg tcctgaggca cacaggtaat ggggccacct gcttgacaca ttgtgacgga
     300
     accgacacca aagctgaggt ccccttgatc atgaactcca taaaatcctt ttctgaccac
     360
     gctcaatgtg gaaggtgaga tctacgctgc tctcataggc tggaagtaca ccttgttgga
     420
     ggcttcagtg acgacaggca gttgtcacaa aaactcactc atcaacttct tagtgaattt
     480
     gacaggcaag aagatgacat tcacttagtg acattatgtg tgacagaatt aaatgaccgg
     540
     gaagaaaacg aaaaccactt tccagtaata tatggcattg ctgtcaacat taagactgca
     600
     gagatttaca gagcatcctt tcaagatcgg ggtccggagg agcagcttcg tgctgcgcga
     660
     actttagcag gaggaccaat gattagcatt tatgatgcag agacagaaca acttcgtata
     720
     ggaccgtact cctggacacc atttccacat gtggatttct ggttgcacca agatgacaag
     780
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caaatactag agaatctttc cacttcgcct ctggctgagc caccccactt tgttgaacat
840
attagatcta ccttgatgtt tttaaaaaaa cacccatctc cagctcacac actgttttct
900
ggaaataaag ccctactcta caaaaaaaat gaagatggct tgtgggaaaa gatctcttct
960
ccaggaagtt aaaaaacatg aattaccaaa gaaagcacct tcttggcctg acagaccatt
1020
ggtggggctg gcacgaatcc agatctggaa cctacatctg ttgggtctta ggtcttctcc
1080
ttccttcctc agtgtttttc aaatgacttt catcaaatga ctttcaaaat aaaaccttat
1140
tttggcaaag gcaaaaaaaa aaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa
1200
aaaaaaaaaa a
1211


<210> 4568
<211> 120
<212> PRT
<213> Homo sapiens


<400> 4568
Met Pro Leu Leu Val Glu Gly Arg Arg Val Arg Leu Pro Gln Ser Ala
 1               5                   10                  15
Gly Asp Leu Val Arg Ala His Pro Pro Leu Glu Glu Arg Ala Arg Leu
             20                  25                  30
Leu Arg Gly Gln Ser Val Gln Gln Val Gly Pro Gln Gly Leu Leu Tyr
         35                  40                  45
Val Gln Gln Arg Glu Leu Ala Val Thr Ser Pro Lys Asp Gly Ser Ile
     50                  55                  60
Ser Ile Leu Gly Ser Asp Asp Ala Thr Thr Cys His Ile Val Val Leu
65                  70                  75                  80
Arg His Thr Gly Asn Gly Ala Thr Cys Leu Thr His Cys Asp Gly Thr
                 85                  90                  95
Asp Thr Lys Ala Glu Val Pro Leu Ile Met Asn Ser Ile Lys Ser Phe
             100                 105                 110
Ser Asp His Ala Gln Cys Gly Arg
         115                 120


<210> 4569
<211> 1797
<212> DNA
<213> Homo sapiens


<400> 4569
nttttttttt tttttttttt tttttttttt ttttttttaa aaatcggcat gctcctttat
60
ttgttcagaa gagcagccag catcaccctc gccactcaaa cctggcacat acgcttcgga
120
gacaatggcc tcgggaccct catgctgctg gcccaggag agacagttct gaggcagaaa
180
ctcggcgtcc aagggggggcc gcgggtcagg cactgtggtg aagggaacgc cggggagtcc
240
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ggccccacct tgcagctggg gacacggggg cgcaaacaga gggggcaggc tagtgtcccg
300
ctgccccagg aacagacctc agggccccag gagggtctgc aggcagctag gagcctgcca
360
agtgctggtg gaagtagagg ccgaaaaggc tggcgagcag ctggcaggca gccgtccacc
420
agatgaggta ggccaggacg ccacggagga agaggggagt aagcaggcca cccagggccc
480
cggcaatccg cgctgcagtc tgctggactt cgtcctcccc agagccgann tggggggcagc
540
gctggctgag ganntgggtc gggggatagt agaggagctg ggcccaggcc ccaggaatag
600
cctcccagcg tcttgagcag aagtgtgcag ttgagggtga ggatgagcgc gtcaggtact
660
gcaagctcac cacggtcaca tagcagtaga ctcggaccac cctctgctgg atttcacggg
720
cttcgatgcg gccagcctcc cttcgcagct gctccacccg ggccttggcc aggcacaggt
780
aggcctgcag gtggggccgg gtcaccgcca gccgcagcag gcacagcacc accagcaacc
840
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900
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960
ggagacagga agctggtgtg caggaggaac tgcagcatgg gtctgtcctc cgacatggtc
1020
agtgcgtccc ggtgggtctg ggccagccgc aggcctggga aggtgaggaa ggcacccagc
1080
acagagccca ccactgccag tcccacgcgg atagccagct tggccacagg aagcgcccag
1140
tcccagccct gcttcttcag aagtggctct aagttctggg tcatgctggc cagaccaggc
1200
tccaggccca gctcgagggt ctcctcccgc accacttgca ccagcatggc cagcagcagg
1260
aagaggaagg caaaggtgag gcagacagag cgctcacccc cctcctcggc gctgaagtac
1320
agccgtgtca ctgtcaggaa catcttgatg gagaaggtca ccgtgagcag gcaccagaac
1380
acagcaatgt tagtctcctt ggctggtccc agcatgtagt agtaggcctc tgtgaagagg
1440
tacacgccgc ccgagtacac agcaaagtcc acaaaccact ggtactccag gaagaagcgc
1500
aggaccaggg catccacggt cgtgaggggg caggtctcca gctggaacgg ggcatctcgg
1560
ggcacagaca gtggcttctc ctcactaagg ccattggccc accgctcttt cctgcctctg
1620
ggcctcggct tccccgccag ggcccgaagc tcctcctcag acgggtgctt gtatcggaac
1680
aaactgccgt tacagagcag ccagcgcgcg aaggagcagt gtggcgccag cctgtgcatg
1740
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1797
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<210> 4570

<211> 141
<212> PRT
<213> Homo sapiens

<400> 4570
Xaa Phe Phe Phe Phe Phe Phe Phe Phe Phe Phe Phe Leu Lys Ile Gly
 1   5   10   15
Met Leu Leu Tyr Leu Phe Arg Arg Ala Ala Ser Ile Thr Leu Ala Thr
            20   25   30
Gln Thr Trp His Ile Arg Phe Gly Asp Asn Gly Leu Gly Thr Leu Met
            35   40   45
Leu Leu Gly Pro Gly Glu Thr Val Leu Arg Gln Lys Leu Gly Val Gln
        50   55   60
Gly Gly Pro Arg Val Arg His Cys Gly Glu Gly Asn Ala Gly Glu Ser
65   70   75   80
Gly Pro Thr Leu Gln Leu Gly Thr Arg Gly Arg Lys Gln Arg Gly Gln
                85   90   95
Ala Ser Val Pro Leu Pro Gln Glu Gln Thr Ser Gly Pro Gln Glu Gly
            100   105   110
Leu Gln Ala Ala Arg Ser Leu Pro Ser Ala Gly Gly Ser Arg Gly Arg
        115   120   125
Lys Gly Trp Arg Ala Ala Gly Arg Gln Pro Ser Thr Arg
        130   135   140

<210> 4571
<211> 1084
<212> DNA
<213> Homo sapiens

<400> 4571
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tctattccta catgagcccg aacaaatgct ctggaatgcg tttccccctt caggaagaga
120
actcagttac acatcacgaa gtcaaatgcc aggggaaacc attagccgga atctacagga
180
aacgagaaga gaaaagaaat gctgggaacg cagtacggag cgccatgaag tccgaggaac
240
agaagatcaa agacgccagg aaaggtcccc tggtaccttt ccaaaccaa aaatctgaag
300
cagcagaacc tccaaaaact ccaccctcat cttgtgattc caccaatgca gccatcgcca
360
agcaagccct gaaaaagccc atcaagggca acaggcccc cgaaaaaaa agctcaagga
420
aaaacgcaac agaatcgcaa acttacggat ttctaccctg tccgaaggag ctccaggaag
480
agcaaagccg agctgcagtc tgaagaaagg aaaagaatag atgaattgat tgaaagtggg
540
aaggaagaag gaatgaagat tgacctcatc gatggcaaag caggggtgt gattgccacc
600
aagcagttct cccggggtga ctttgtggtg aataccacg gggacctcat cgagatcacc
660
gacgccaaga aacgggaggc tctgtacgca caggaccctt ccacgggctg ctacatgtac
720

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tattttcagt atctgagcaa aacctactgg tgagtccact gttgcttaga gtggcttttc
780
tgtcctctgg gcagtgagga gaggccaaag ggccaggaac tcctgattct gtttggtggc
840
cagtctttg gttttgttgt tgttgacttt ttttttttta ttttttgaga tggagtcttg
900
ctctgttgcc caggctggag tgcagtggtg tgatctcggc tcattgcaac ctcctctcag
960
gctcaaagaa ttctcctccc tcagcctcca gagtagccca gctaattttt tttttctgta
1020
tttttagtag aggtggagtt ttgccacatt ggccaagctg tcttgaact cctgacctca
1080
gacc
1084
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<210> 4572
<211> 126
<212> PRT
<213> Homo sapiens

<400> 4572
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Lys Ser Pro Ser Arg Ala Asn Arg Pro Pro Glu Lys Lys Ala Gln Gly
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Lys Thr Gln Gln Asn Arg Lys Leu Thr Asp Phe Tyr Pro Val Arg Arg
             20                  25                  30
Ser Ser Arg Lys Ser Lys Ala Glu Leu Gln Ser Glu Glu Arg Lys Arg
         35                  40                  45
Ile Asp Glu Leu Ile Glu Ser Gly Lys Glu Glu Gly Met Lys Ile Asp
     50                  55                  60
Leu Ile Asp Gly Lys Gly Arg Gly Val Ile Ala Thr Lys Gln Phe Ser
65                  70                  75                  80
Arg Gly Asp Phe Val Val Glu Tyr His Gly Asp Leu Ile Glu Ile Thr
                 85                  90                  95
Asp Ala Lys Lys Arg Glu Ala Leu Tyr Ala Gln Asp Pro Ser Thr Gly
            100                 105                 110
Cys Tyr Met Tyr Tyr Phe Gln Tyr Leu Ser Lys Thr Tyr Trp
        115                 120                 125
```

<210> 4573
<211> 309
<212> DNA
<213> Homo sapiens

<400> 4573
```
cccggagatg gaggcctcca ggaccaagtc ggtgcttggg ggcttcccgg gcccaccggc
60
cccaagggag atgccggcag tcggggccca atggggatga gaggcccacc aggtccacag
120
ggcccccag ggagccctgg ccgggctgga gctgtgggca ccctggaaa aaggggacct
180
tctggcccac aaggccttct tggccccct gggcccccag ccctgttgg ccaccccat
240
gcccggatct cccagcatgg agatccattg ctgtccaaca ccttcactga gaccaacccc
300
```

```
ttcacgcgt
309


<210> 4574
<211> 103
<212> PRT
<213> Homo sapiens


<400> 4574
Pro Gly Asp Gly Gly Leu Gln Asp Gln Val Gly Ala Trp Gly Leu Pro
 1               5                  10                  15
Gly Pro Thr Gly Pro Lys Gly Asp Ala Gly Ser Arg Gly Pro Met Gly
            20                  25                  30
Met Arg Gly Pro Pro Gly Pro Gln Gly Pro Pro Gly Ser Pro Gly Arg
        35                  40                  45
Ala Gly Ala Val Gly Thr Pro Gly Lys Arg Gly Pro Ser Gly Pro Gln
    50                  55                  60
Gly Leu Leu Gly Pro Pro Gly Pro Pro Ala Pro Val Gly Pro Pro His
65                  70                  75                  80
Ala Arg Ile Ser Gln His Gly Asp Pro Leu Leu Ser Asn Thr Phe Thr
                85                  90                  95
Glu Thr Asn Pro Phe Thr Arg
                100


<210> 4575
<211> 1068
<212> DNA
<213> Homo sapiens


<400> 4575
nttttttttt tttaaatgag gtgactagga ggaggggccc cagctgccct gcattcactg
60
cactcaccca aagcgctggt gtttgttgag ggtgtacagc aggtagtcag ccatggtctc
120
ctccccgacc aggtggtcca gcaccgttcc acacagggcc agcttcaggc ctgtctccac
180
actttcaatc cgaggagcca gcacgccagg agtgtccaac aggaacatca ggggccgctc
240
agagacctga attttggaca tcacagctct ggtgatccca ggctcgccac ccaccctggt
300
ggctttccct ttcctgaggt gctgcctccg gagggagttg atgagggagg acttgcccac
360
gttggggacc ccaatgacca tgatacagta ctccaggttc tcttttcggt ggtagcggtg
420
gcttctccca atcagttcag tgaccatcgg gatgatctgc ttgacatttt catcctttac
480
acagttggta aaaatgacat tttttaggcc ttctccttct aagtgttgca taattttctg
540
ctgctctgta agatccgcca agtccatctt gttgaggacc agcaagtgag gcttaagccc
600
aagggtttcc tgaaacagag ggttgcggcc tgaaagtggg atccgggcat cgtggacctc
660
gatgatacag tccaccagct tcaggctgct ctgcatcttc ttcagccccct tggccatgtg
720
```

```
gcccgggaac cagcgcgcca cgtcgcgacc gcacagggggg aagttctccc gccaggcggc
780
ctgggcggcg ctgcacagcg cgcgcggggt caatctcatg gcggcaccgt ccccggaaac
840
gctcccgcag ctgaccttct cgctctgtcg cccaggctgg aacgcagtgg cacaatctca
900
actcactgca agctccgcct cccgggttca cgccattctc ctgcctcagc ctcctaagtg
960
gctgggacta caggtgcccg ccaccacacc cacctaattt tcgtattttt agtagagacg
1020
gggtttcacc gtttcagcaa gaatggtctc aatctcctga cctcatga
1068
```

```
<210> 4576
<211> 107
<212> PRT
<213> Homo sapiens
```

```
<400> 4576
Lys Trp Asp Pro Gly Ile Val Asp Leu Asp Asp Thr Val His Gln Leu
 1               5                  10                  15
Gln Ala Ala Leu His Leu Leu Gln Pro Leu Gly His Val Ala Arg Glu
                20                  25                  30
Pro Ala Arg His Val Ala Thr Ala Gln Gly Glu Val Leu Pro Pro Gly
            35                  40                  45
Gly Leu Gly Gly Ala Ala Gln Arg Ala Arg Gly Gln Ser His Gly Gly
        50                  55                  60
Thr Val Pro Gly Asn Ala Pro Ala Ala Asp Leu Leu Ala Leu Ser Pro
65                  70                  75                  80
Arg Leu Glu Arg Ser Gly Thr Ile Ser Thr His Cys Lys Leu Arg Leu
                85                  90                  95
Pro Gly Ser Arg His Ser Pro Ala Ser Ala Ser
            100                 105
```

```
<210> 4577
<211> 3525
<212> DNA
<213> Homo sapiens
```

```
<400> 4577
nggcaaggaa ataattattc tgattggtga aactcccagc tcaaaattag agttgtatta
60
ctaacgaaga agagactggc tatggaggga cacgatttca gaggtgcttc tgagctgctc
120
gtgctgacct cagccctgtc cttcctgcag accctgctga aggtcgtgta cgtggagaat
180
gacatccagc acctgcagga catgtcacac ttcccagacc ggggagcga gaatgggaca
240
cccatggacg tgaaagccgg ggtgcgggtc atgcaggtca gtcctgacgg ccagcatttg
300
gcttcaggcg accgaagtgg aaatctgagg caagtgggcc ctggcagtgt ccagtgtaca
360
cctcccagct ccagctcagg ttctcagggc agtgggcaga agccctggcc ttggcacctc
420
```

```
ctgctgccca ttgggaatga ggggctgatc cacgagctgc acttcatgga cgagctggtc
480
aaggtggagg cccatgatgc tgaggtgctg tgcctggagt actccaagcc agagacgggg
540
ctgaccttgc tggcctcagc cagtcgggac cggctgatcc atgtgctgaa cgtggagaag
600
aactacaacc tggagcagac gctggatgac cactcctcct ccatcaccgc catcaagttc
660
gctggcaaca gagacatcca gatgatcagc tgtggggctg acaagagcat ctactttcgc
720
agtgcccagc agggttcgga tggactacac tttgtccgta cccaccacgt agcagagaaa
780
accaccttgt atgacatgga cattgacatc acccagaagt acgtggccgt ggcctgccag
840
gaccgcaatg tgagagtcta caacactgtg aacgggaagc agaagaagtg ctacaagggc
900
tcccagggtg acgaagggtc cttgctgaag gtccatgtgg acccctcagg caccttcctg
960
gccaccagct gctctgacaa aagcatctca gtgattgact tttactcggg cgagtgcatt
1020
gccaagatgt ttggccattc aggtgggtgt gcctctctgc ttgggatgcc tccccacccg
1080
cccacaccct ctgactccga aggcaagtgc agcctctctg ctttgtttgc agaaattatt
1140
accagcatga agttcaccta tgactgtcat cacttgatca cagtatctgg agacagctgc
1200
gtgttcatct ggcacctggg cccggagatc accaactgca tgaagcagca cttgctggag
1260
attgaccacc ggcagcagca gcagcacaca aatgacaaga agcggagtgg ccaccccagg
1320
tcctggcagc ccctgcctgt ccaccagagg gatgagtccc tgccagggcc ccatggagtg
1380
atgctgggga cacaatcctc gttgcctgct aaccaacggc aagctgccac tgtgggcaaa
1440
gcggctgggg acgatgatgt ggcagatggc ttggccttcc acgccaagcg cagctaccag
1500
ccccacggcc gctgggcaga gcgggccggc caagagcccc tcaagaccat cctggatgcc
1560
caggacctgg attgctactt taccccatg aagcccgaga gtctggagaa ctccattctg
1620
gattcactgg agccacagag cctggccagc ctgctgagtg agcagaagga atcatctgag
1680
gccagtgagc tcatcctcta ctctctggag gcagaagtga cagtcacagg gacagacagc
1740
cagtattgca ggaaggaggt ggaggccggg cctggagacc agcagggcga ctcctacctc
1800
agggtgtcct ccgacagccc aaaggaccag agcccgcctg agggtcccac agaagatgag
1860
ctgtccctgc ccgagggacc cagcgtcccc agcagctccc taccccagac tccggagcag
1920
gagaagttcc tccgccacca ctttgagaca ctgactgagt cccccctgcag agctctggga
1980
gacgtggagg cctctgaagc tgaagaccac ttcttcaacc cacgcctgag tatctccacg
2040
```

```
cagttcctct caagcctcca gaaggcatcc aggttcaccc ataccttccc tccccgggca
2100
acccagtgcc ttgtgaagtc tccagaggtc aagctcatgg accgaggcgg aagccagccc
2160
agagcaggta ctggctacgc ctccccagac aggacccact cagtgccatc tgcttccgtt
2220
acagctccct gccttacgag cctggcgtcc tgtgtccctg cttcctccgt gctgcccaca
2280
gacaggaatc tcccaacgcc cacatctgca cccaccccag gcctggctca gggtgtccat
2340
gccccctcca cctgttccta catggaggcc actgccagct cccgtgccag gatatcacgc
2400
agcatctccc tcggtgacag tgagggccct atcgtggcca cactggccca gcccctccgt
2460
aggccatcgt ccgttgggga gctggcctcc ttgggccagg agcttcaggc catcaccacc
2520
gcgacaacac ccagtttgga cagtgagggc caagagcctg ccctgcgttc ctggggcaac
2580
cacgaggccc gggccaacct gagactgacc ctgtcaagtg cctgtgatgg gctcctgcag
2640
cccccgtgg atacccagcc tggcgtcacc gtccctgcag tgagcttccc agcccctagc
2700
cctgtggaag agagcgccct gaggctccac ggctctgcct ttcgcccaag tctcccagct
2760
cctgagtccc ctggccttcc tgcccacccc agtaacccc agcttccaga ggcccggcct
2820
ggcatccctg gcggcactgc ctccctcctg gagcccacct ccgggtgggg aacatcttgc
2880
acaggctgca gaccaccttc caagaagccc tcgacctttta ccgtgtgttg gtctccagtg
2940
gccaggtgga caccgggcag cagcaggcac ggactgagct ggtctccacc ttcctgtgga
3000
tccacagcca gctggaggct gaatgcctgg tggggactag tgtggcccca gcccaggctc
3060
tgcccagccc aggaccccg tccccaccga cgctgtaccc cctggccagc ccagacctgc
3120
aggccctgct ggaacactac tcggagctgc tggtgcaggc cgtgcggagg aaggcacggg
3180
ggcactgagg gcgcagcccc tccaccgcag ccctgctgct tctgaggact taggtatttt
3240
aagcgaataa actgacagct ttgaggaatg gttcctggtg tctgtttggg cctatccaca
3300
aagccctctt caagtggaag tggggaggga gggtagaagg tgatgcccag aggactcgtg
3360
tctgtcagtg gagagcatgg gaccagcgct cccaagaagt tcaggaactg cagccatgac
3420
ctcagggcca gtcctcccac actgcccaca gagctgccac agaccagtgt gaggtgctta
3480
cccagtgggg cccatttgtg ccccagggag gagccagacc ctctt
3525


<210> 4578
<211> 1007
<212> PRT
```

```
<213> Homo sapiens

<400> 4578
Met Ser His Phe Pro Asp Arg Gly Ser Glu Asn Gly Thr Pro Met Asp
 1               5                  10                  15
Val Lys Ala Gly Val Arg Val Met Gln Val Ser Pro Asp Gly Gln His
            20                  25                  30
Leu Ala Ser Gly Asp Arg Ser Gly Asn Leu Arg Gln Val Gly Pro Gly
        35                  40                  45
Ser Val Gln Cys Thr Pro Pro Ser Ser Ser Ser Gly Ser Gln Gly Ser
    50                  55                  60
Gly Gln Lys Pro Trp Pro Trp His Leu Leu Leu Pro Ile Gly Asn Glu
65                  70                  75                  80
Gly Leu Ile His Glu Leu His Phe Met Asp Glu Leu Val Lys Val Glu
                85                  90                  95
Ala His Asp Ala Glu Val Leu Cys Leu Glu Tyr Ser Lys Pro Glu Thr
            100                 105                 110
Gly Leu Thr Leu Leu Ala Ser Ala Ser Arg Asp Arg Leu Ile His Val
            115                 120                 125
Leu Asn Val Glu Lys Asn Tyr Asn Leu Glu Gln Thr Leu Asp Asp His
    130                 135                 140
Ser Ser Ser Ile Thr Ala Ile Lys Phe Ala Gly Asn Arg Asp Ile Gln
145                 150                 155                 160
Met Ile Ser Cys Gly Ala Asp Lys Ser Ile Tyr Phe Arg Ser Ala Gln
            165                 170                 175
Gln Gly Ser Asp Gly Leu His Phe Val Arg Thr His His Val Ala Glu
            180                 185                 190
Lys Thr Thr Leu Tyr Asp Met Asp Ile Asp Ile Thr Gln Lys Tyr Val
        195                 200                 205
Ala Val Ala Cys Gln Asp Arg Asn Val Arg Val Tyr Asn Thr Val Asn
    210                 215                 220
Gly Lys Gln Lys Lys Cys Tyr Lys Gly Ser Gln Gly Asp Glu Gly Ser
225                 230                 235                 240
Leu Leu Lys Val His Val Asp Pro Ser Gly Thr Phe Leu Ala Thr Ser
            245                 250                 255
Cys Ser Asp Lys Ser Ile Ser Val Ile Asp Phe Tyr Ser Gly Glu Cys
        260                 265                 270
Ile Ala Lys Met Phe Gly His Ser Gly Gly Cys Ala Ser Leu Leu Gly
        275                 280                 285
Met Pro Pro His Pro Pro Thr Pro Ser Asp Ser Glu Gly Lys Cys Ser
    290                 295                 300
Leu Ser Ala Leu Phe Ala Glu Ile Ile Thr Ser Met Lys Phe Thr Tyr
305                 310                 315                 320
Asp Cys His His Leu Ile Thr Val Ser Gly Asp Ser Cys Val Phe Ile
            325                 330                 335
Trp His Leu Gly Pro Glu Ile Thr Asn Cys Met Lys Gln His Leu Leu
            340                 345                 350
Glu Ile Asp His Arg Gln Gln Gln His Thr Asn Asp Lys Lys Arg
        355                 360                 365
Ser Gly His Pro Arg Ser Trp Gln Pro Leu Pro Val His Gln Arg Asp
    370                 375                 380
Glu Ser Leu Pro Gly Pro His Gly Val Met Leu Gly Thr Gln Ser Ser
385                 390                 395                 400
Leu Pro Ala Asn Gln Arg Gln Ala Ala Thr Val Gly Lys Ala Ala Gly
```

```
                      405                   410                   415
Asp Asp Asp Val Ala Asp Gly Leu Ala Phe His Ala Lys Arg Ser Tyr
            420                   425                   430
Gln Pro His Gly Arg Trp Ala Glu Arg Ala Gly Gln Glu Pro Leu Lys
            435                   440                   445
Thr Ile Leu Asp Ala Gln Asp Leu Asp Cys Tyr Phe Thr Pro Met Lys
      450                   455                   460
Pro Glu Ser Leu Glu Asn Ser Ile Leu Asp Ser Leu Glu Pro Gln Ser
465                   470                   475                   480
Leu Ala Ser Leu Leu Ser Glu Gln Lys Glu Ser Ser Glu Ala Ser Glu
                485                   490                   495
Leu Ile Leu Tyr Ser Leu Glu Ala Glu Val Thr Val Thr Gly Thr Asp
            500                   505                   510
Ser Gln Tyr Cys Arg Lys Glu Val Glu Ala Gly Pro Gly Asp Gln Gln
            515                   520                   525
Gly Asp Ser Tyr Leu Arg Val Ser Ser Asp Ser Pro Lys Asp Gln Ser
      530                   535                   540
Pro Pro Glu Gly Pro Thr Glu Asp Glu Leu Ser Leu Pro Glu Gly Pro
545                   550                   555                   560
Ser Val Pro Ser Ser Ser Leu Pro Gln Thr Pro Glu Gln Glu Lys Phe
                565                   570                   575
Leu Arg His His Phe Glu Thr Leu Thr Glu Ser Pro Cys Arg Ala Leu
            580                   585                   590
Gly Asp Val Glu Ala Ser Glu Ala Glu Asp His Phe Phe Asn Pro Arg
            595                   600                   605
Leu Ser Ile Ser Thr Gln Phe Leu Ser Ser Leu Gln Lys Ala Ser Arg
      610                   615                   620
Phe Thr His Thr Phe Pro Pro Arg Ala Thr Gln Cys Leu Val Lys Ser
625                   630                   635                   640
Pro Glu Val Lys Leu Met Asp Arg Gly Gly Ser Gln Pro Arg Ala Gly
                645                   650                   655
Thr Gly Tyr Ala Ser Pro Asp Arg Thr His Ser Val Pro Ser Ala Ser
            660                   665                   670
Val Thr Ala Pro Cys Leu Thr Ser Leu Ala Ser Cys Val Pro Ala Ser
            675                   680                   685
Ser Val Leu Pro Thr Asp Arg Asn Leu Pro Thr Pro Thr Ser Ala Pro
      690                   695                   700
Thr Pro Gly Leu Ala Gln Gly Val His Ala Pro Ser Thr Cys Ser Tyr
705                   710                   715                   720
Met Glu Ala Thr Ala Ser Ser Arg Ala Arg Ile Ser Arg Ser Ile Ser
                725                   730                   735
Leu Gly Asp Ser Glu Gly Pro Ile Val Ala Thr Leu Ala Gln Pro Leu
            740                   745                   750
Arg Arg Pro Ser Ser Val Gly Glu Leu Ala Ser Leu Gly Gln Glu Leu
            755                   760                   765
Gln Ala Ile Thr Thr Ala Thr Thr Pro Ser Leu Asp Ser Glu Gly Gln
      770                   775                   780
Glu Pro Ala Leu Arg Ser Trp Gly Asn His Glu Ala Arg Ala Asn Leu
785                   790                   795                   800
Arg Leu Thr Leu Ser Ser Ala Cys Asp Gly Leu Leu Gln Pro Pro Val
                805                   810                   815
Asp Thr Gln Pro Gly Val Thr Val Pro Ala Val Ser Phe Pro Ala Pro
            820                   825                   830
Ser Pro Val Glu Glu Ser Ala Leu Arg Leu His Gly Ser Ala Phe Arg
```

```
              835                    840                    845
Pro Ser Leu Pro Ala Pro Glu Ser Pro Gly Leu Pro Ala His Pro Ser
        850                    855                    860
Asn Pro Gln Leu Pro Glu Ala Arg Pro Gly Ile Pro Gly Gly Thr Ala
865                    870                    875                    880
Ser Leu Leu Glu Pro Thr Ser Gly Trp Gly Thr Ser Cys Thr Gly Cys
                885                    890                    895
Arg Pro Pro Ser Lys Lys Pro Ser Thr Phe Thr Val Cys Trp Ser Pro
                900                    905                    910
Val Ala Arg Trp Thr Pro Gly Ser Ser Arg His Gly Leu Ser Trp Ser
        915                    920                    925
Pro Pro Ser Cys Gly Ser Thr Ala Ser Trp Arg Leu Asn Ala Trp Trp
        930                    935                    940
Gly Leu Val Trp Pro Gln Pro Arg Leu Cys Pro Ala Gln Asp Pro Arg
945                    950                    955                    960
Pro His Arg Arg Cys Thr Pro Trp Pro Ala Gln Thr Cys Arg Pro Cys
                965                    970                    975
Trp Asn Thr Thr Arg Ser Cys Trp Cys Arg Pro Cys Gly Gly Arg His
                980                    985                    990
Gly Gly Thr Glu Gly Ala Ala Pro Pro Pro Gln Pro Cys Cys Phe
        995                    1000                   1005
```

<210> 4579
<211> 321
<212> DNA
<213> Homo sapiens

<400> 4579
```
nncaagatgt ttggccattc agaaattatt accagcatga agttcaccta tgactgtcat
60
cacttgatca cagtatctgg agacagctgc gtgttcatct ggcacctggg cccggagatc
120
accaactgca tgaagcagca cttgctggag attgaccacc ggcagcagca gcagcacaca
180
aatgacaaga agcggagtgg ccccccccagg caggatacgt atgtgtccac acctagtgag
240
attcactccc tgagccctgg agagcaaaca gaggatgatc tggaggaaga gtgtgagcca
300
gaagagatgc tgaagacacc n
321
```

<210> 4580
<211> 107
<212> PRT
<213> Homo sapiens

<400> 4580
```
Xaa Lys Met Phe Gly His Ser Glu Ile Ile Thr Ser Met Lys Phe Thr
 1               5                   10                  15
Tyr Asp Cys His His Leu Ile Thr Val Ser Gly Asp Ser Cys Val Phe
            20                  25                  30
Ile Trp His Leu Gly Pro Glu Ile Thr Asn Cys Met Lys Gln His Leu
        35                  40                  45
Leu Glu Ile Asp His Arg Gln Gln Gln Gln His Thr Asn Asp Lys Lys
```

```
        50                      55                      60
Arg Ser Gly Pro Pro Arg Gln Asp Thr Tyr Val Ser Thr Pro Ser Glu
65                      70                      75                      80
Ile His Ser Leu Ser Pro Gly Glu Gln Thr Glu Asp Asp Leu Glu Glu
                85                      90                      95
Glu Cys Glu Pro Glu Glu Met Leu Lys Thr Pro
                100                     105
```

<210> 4581
<211> 1396
<212> DNA
<213> Homo sapiens

<400> 4581
nngtcgccgg ggcgaaggcg gcagagtcag agcgggagcc gaagtcggag caggagccat
60
gggcggcgaa accgacggcg ccgggaggac gagggacggc gcagacggag gcggcggagc
120
cgggagcgca ggtcagattc agaggaagag cggtggcagc gctcagggat gcgaagccgg
180
agccccccgc ggcccaagtg gcactcaaga gatgggtcct ctcagtcgga ctcaggagag
240
gagcagtcac ggggccagtg ggctcgccgg cgacggcgcg cacgctcgtg gtctcctagc
300
tcctcagcat ccagctcggc gtctccaggg cgatcccaga gcccccgggc ggccgcggct
360
gccctgagcc agcagcagag cctgcaggag cggctgcggc tgcgggagga gcggaagcag
420
caggaggagc tgatgaaggc cttcgagacg cccgaggaga agcgcgcacg gcggctggcc
480
aagaaggagg ccaaggagcg caagaagcgg gagaagatgg gctggggtga ggagtacatg
540
ggctacacca acaccgacaa ccccttcgga gacaacaacc tgctgggcac cttcatctgg
600
aataaggccc tggagaagaa ggggatcagc cacctggagg agaaggagct gaaggagcgg
660
aacaagagga tccaggagga caaccggctg gagctgcaga aggtgaagca gctgcggctg
720
gagcgggagc gggagaaggc catgcgcgag caggagctgg agatgctgca gcgcgtgaag
780
gggacagagc acttcaagac atgggaggag caggaggaca acttccacct ccagcaggcc
840
aagctgcgtt ccaagatccg catccgggac gggcgggcca gcccatcga cctgctggcc
900
aagtacatca gcgctgagga tgacgatctg gccggggaga tgcatgagcc ctacacgttc
960
ctcaacggcc tcaccgtggc cgacatggag gacctgctgg aggatatcca ggtctacatg
1020
gagctggagc agggcaagaa cgccgacttc tggcgggaca tgaccaccat caccgaggac
1080
gagatctcca agctccgcaa gctggaggcc tcgggcaagg ggccaggtga gcgccgcgag
1140
ggggtcaacg cctccgtcag ctctgatgtg cagtcggtgt tcaaggggaa gacatacaac
1200
```

cagctgcagg tcatcttcca gggcatcgag ggcaaaatcc gcgctggtgg ccccaacctg
1260
gacatgggct actgggagag cctcctgcag cagcttcgtg cccacatggc gcgggcccgg
1320
ctgcgtgagc gccaccagga cgtgctgcgg cagaagctgt acaaactgaa gcaggagcag
1380
ggcgtggaga gctagc
1396

<210> 4582
<211> 354
<212> PRT
<213> Homo sapiens

<400> 4582
Arg Ser Gln Ser Pro Arg Ala Ala Ala Ala Ala Leu Ser Gln Gln Gln
 1   5   10   15
Ser Leu Gln Glu Arg Leu Arg Leu Arg Glu Glu Arg Lys Gln Gln Glu
            20   25   30
Glu Leu Met Lys Ala Phe Glu Thr Pro Glu Glu Lys Arg Ala Arg Arg
            35   40   45
Leu Ala Lys Lys Glu Ala Lys Glu Arg Lys Lys Arg Glu Lys Met Gly
    50   55   60
Trp Gly Glu Glu Tyr Met Gly Tyr Thr Asn Thr Asp Asn Pro Phe Gly
65   70   75   80
Asp Asn Asn Leu Leu Gly Thr Phe Ile Trp Asn Lys Ala Leu Glu Lys
            85   90   95
Lys Gly Ile Ser His Leu Glu Glu Lys Glu Leu Lys Glu Arg Asn Lys
            100   105   110
Arg Ile Gln Glu Asp Asn Arg Leu Glu Leu Gln Lys Val Lys Gln Leu
        115   120   125
Arg Leu Glu Arg Glu Arg Glu Lys Ala Met Arg Glu Gln Glu Leu Glu
    130   135   140
Met Leu Gln Arg Val Lys Gly Thr Glu His Phe Lys Thr Trp Glu Glu
145   150   155   160
Gln Glu Asp Asn Phe His Leu Gln Gln Ala Lys Leu Arg Ser Lys Ile
            165   170   175
Arg Ile Arg Asp Gly Arg Ala Lys Pro Ile Asp Leu Leu Ala Lys Tyr
            180   185   190
Ile Ser Ala Glu Asp Asp Asp Leu Ala Gly Glu Met His Glu Pro Tyr
        195   200   205
Thr Phe Leu Asn Gly Leu Thr Val Ala Asp Met Glu Asp Leu Leu Glu
    210   215   220
Asp Ile Gln Val Tyr Met Glu Leu Glu Gln Gly Lys Asn Ala Asp Phe
225   230   235   240
Trp Arg Asp Met Thr Thr Ile Thr Glu Asp Glu Ile Ser Lys Leu Arg
            245   250   255
Lys Leu Glu Ala Ser Gly Lys Gly Pro Gly Glu Arg Arg Glu Gly Val
            260   265   270
Asn Ala Ser Val Ser Ser Asp Val Gln Ser Val Phe Lys Gly Lys Thr
        275   280   285
Tyr Asn Gln Leu Gln Val Ile Phe Gln Gly Ile Glu Gly Lys Ile Arg
    290   295   300
Ala Gly Gly Pro Asn Leu Asp Met Gly Tyr Trp Glu Ser Leu Leu Gln

```
305                    310                  315                  320
Gln Leu Arg Ala His Met Ala Arg Ala Arg Leu Arg Glu Arg His Gln
                       325                  330                  335
Asp Val Leu Arg Gln Lys Leu Tyr Lys Leu Lys Gln Glu Gln Gly Val
                   340                  345                  350
Glu Ser
```

<210> 4583
<211> 3350
<212> DNA
<213> Homo sapiens

<400> 4583

```
nctacaatca agtggaaaaa ccggaaaaaa ggccaggaac ctgaatacga cctaatagct
60
gtttccgagg gggcaacttc cacggagaac cttctgccct ggtaacggcc agagaggagg
120
agatgacgcc agtcagggag cggccgtggc ccagacagtg aggaagcgcg aaggcggagc
180
aaccgaggaa tcctccggag aagaatcaga gccgtcgcta ccgccactac cgccaccacc
240
atggaaggag caaagccgac attgcagctc gtgtaccagg cagtgcaggc gctttaccac
300
gacccagatc ccagcggaaa ggagcgcgcc tctttttggc ttggggagct gcagcgttcg
360
gttcatgcat gggagatctc agaccagttg ttacagatcc ggcaggatgt ggagtcatgc
420
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<212> PRT
<213> Homo sapiens

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Gln Leu Leu Gln Ile Arg Gln Asp Val Glu Ser Cys Tyr Phe Ala Ala
    50                  55                  60
Gln Thr Met Lys Met Lys Ile Gln Thr Ser Phe Tyr Glu Leu Pro Thr
65                  70                  75                  80
Asp Ser His Ala Ser Leu Arg Asp Ser Leu Leu Thr His Ile Gln Asn
            85                  90                  95
Leu Lys Asp Leu Ser Pro Val Ile Val Thr Gln Leu Ala Leu Ala Ile
            100                 105                 110
Ala Asp Leu Ala Leu Gln Met Pro Ser Trp Lys Gly Cys Val Gln Thr
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Leu Val Glu Lys Tyr Ser Asn Asp Val Thr Ser Leu Pro Phe Leu Leu
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Glu Ile Leu Thr Val Leu Pro Glu Glu Val His Ser Arg Ser Leu Arg
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Ile Gly Ala Asn Arg Arg Thr Glu Ile Ile Glu Asp Leu Ala Phe Tyr
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Ser Ser Thr Val Val Ser Leu Leu Met Thr Cys Val Glu Lys Ala Gly
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Thr Asp Glu Lys Met Leu Met Lys Val Phe Arg Cys Leu Gly Ser Trp
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Phe Asn Leu Gly Val Leu Asp Ser Asn Phe Met Ala Asn Asn Lys Leu
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    Leu Tyr Lys Thr Asn Asp Glu Val Ile His Gly Ile Phe Lys Ala Tyr
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    Thr Val Phe Leu Asp Arg Leu Ala Val Ile Phe Arg His Thr Asn Pro
                    610                 615                 620
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    Ser Ile Leu Val Asp Glu Tyr Gly Met Glu Glu Gly Cys Arg Gln Gly
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    Leu Leu Asp Met Leu Gln Ala Leu Cys Ile Pro Thr Phe Gln Leu Leu
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    Arg Ser Gln Val Val Ile Pro Ile Leu Gln Trp Ala Ile Ala Ser Thr
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    Thr Leu Asp His Arg Asp Ala Asn Cys Ser Val Met Arg Phe Leu Arg
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    Asp Leu Ile His Thr Gly Val Ala Asn Asp His Glu Glu Asp Phe Glu
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    Leu Arg Lys Glu Leu Ile Gly Gln Val Met Asn Gln Leu Gly Gln Gln
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    Leu Val Ser Gln Leu Leu His Thr Cys Cys Phe Cys Leu Pro Pro Tyr
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    Thr Leu Pro Asp Val Ala Glu Val Leu Trp Glu Ile Met Gln Val Asp
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    Arg Pro Thr Phe Cys Arg Trp Leu Glu Asn Ser Leu Lys Gly Leu Pro
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    Lys Glu Thr Thr Val Gly Ala Val Thr Val Thr His Lys Gln Leu Thr
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<212> PRT
<213> Homo sapiens

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Ser Val Ile Val Glu Val Arg Ser Asp Asp Asp Lys Asp Glu Asp Thr
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His Ser Arg Lys Ser Thr Val Thr Asp Glu Ser Glu Met Gln Asp Met
65                      70                      75                      80
Met Thr Arg Gly Asn Leu Gly Leu Leu Glu Gln Ala Ile Ala Leu Lys
                85                      90                      95
Ala Glu Gln Val Arg Thr Val Cys Glu Pro Gly Cys Pro Pro Ala Glu
                100                     105                     110
Gln Ser Gln Leu Gly Leu Gly Glu Pro Gly Lys Ala Ala Lys Pro Leu
                115                     120                     125
Asp Thr Val Arg Lys Ser Tyr Tyr Ser Lys Asp Pro Ser Arg Ala Glu
        130                     135                     140
Lys Arg Glu Ile Lys Cys Pro Thr Pro Gly Cys Asp Gly Thr Gly His
145                     150                     155                     160
Val Thr Gly Leu Tyr Pro His His Arg Ser Leu Ser Gly Cys Pro His
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Lys Asp Arg Ile Pro Pro Glu Ile Leu Ala Met His Glu Asn Val Leu
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Lys Cys Pro Thr Pro Gly Cys Thr Gly Gln Gly His Val Asn Ser Asn
                195                     200                     205
Arg Asn Thr His Arg Ser Leu Ser Gly Cys Pro Ile Ala Ala Ala Glu
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                245                     250                     255
Val Lys Gln Leu Glu Val Pro Pro Tyr Gly Ser Tyr Arg Pro Asn Val
                260                     265                     270
Ala Pro Ala Thr Pro Arg Ala Asn Leu Ala Lys Glu Leu Glu Lys Phe
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Ser Lys Val Thr Phe Asp Tyr Ala Ser Phe Asp Ala Gln Val Phe Gly
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Lys Arg Met Leu Ala Pro Lys Ile Gln Thr Ser Glu Thr Ser Pro Lys
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Ala Ala Thr Ala Ile Leu Asn Leu Ser Thr Arg Cys Trp Glu Met Pro
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Glu Asn Leu Ser Thr Lys Pro Gln Asp Leu Pro Ser Lys Ser Val Asp
                355                     360                     365
Ile Glu Val Asp Glu Asn Gly Thr Leu Asp Leu Ser Met His Lys His
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Arg Lys Arg Glu Asn Ala Phe Pro Ser Ser Ser Ser Cys Ser Ser Ser
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Pro Gly Val Lys Ser Pro Asp Ala Ser Gln Arg His Ser Ser Thr Ser
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Gln Asp Glu Trp Asp Arg Pro Leu Asp Tyr Thr Lys Pro Ser Arg Leu
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3401

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    Arg Lys Tyr Pro Gly Glu Val Thr Leu Thr Asn Phe Lys Leu Lys Phe
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    Leu Ser Lys Asp Ile Lys Lys Glu Leu Leu Thr Cys Pro Thr Pro Gly
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    Cys Asp Gly Ser Gly His Ile Thr Gly Asn Tyr Ala Ser His Arg Ser
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    Leu Ser Gly Cys Pro Leu Ala Asp Lys Ser Leu Arg Asn Leu Met Ala
            530                      535                      540
    Ala His Ser Ala Asp Leu Lys Cys Pro Thr Pro Gly Cys Asp Gly Ser
    545                      550                      555                      560
    Gly His Ile Thr Gly Asn Tyr Ala Ser His Arg Ser Leu Ser Gly Cys
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    Pro Arg Ala Lys Lys Ser Gly Val Lys Val Ala Pro Thr Lys Asp Asp
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    Lys Glu Asp Pro Glu Leu Met Lys Cys Pro Val Pro Gly Cys Val Gly
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    Leu Gly His Ile Ser Gly Lys Tyr Ala Ser His Arg Ser Ala Ser Gly
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    Ser Gly Leu Ser Gln Ala Leu Ile Gln Ser Leu Ala Asn Ile Arg Leu
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    Pro His Met Glu Pro Ile Cys Glu Gln Asn Phe Asp Ala Tyr Val Ser
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cctgaccatt tgtagtattg ctataggag ccaaacattt tttctcacca tcttgaactg
780
aattattatc gtctggatga tcttgccaaa ctgaaaacac ttcagatgaa ctttcaaact
840
caaaacactg agaatcagat tcctcaaact gaaaaagagt ctctgtcttt tcttccttta
900
ctggattctt ttcctcctta ctattaactg ttgaaacgtg ctgctctgga tgttccctct
960
caaggcatat tttgtcctgt ttagtgagtt tctcaagact caggattctt tcatca
1016

<210> 4208
<211> 193
<212> PRT
<213> Homo sapiens

<400> 4208
Met Ala Glu Asp Pro Val Arg Ser Ser Ser Ser Val Arg Asn Glu Gly
1               5                   10                  15
Gln Ser Asp Thr Asn Lys Arg Glu Leu Val Gly Asn Asp Phe Lys Ser
            20                  25                  30
Ile Asp Arg Arg Thr Ser Thr Pro Asn Ser Arg Ile Gln Arg Ala Thr
        35                  40                  45
Thr Val Ser Gln Lys Lys Ser Ser Lys Leu Cys Thr Cys Thr Glu Pro
    50                  55                  60
Ile Arg Lys Val Pro Val Ser Lys Thr Pro Lys Lys Thr His Ser Asp
65                  70                  75                  80
Ala Lys Lys Gly Gln Asn Arg Ser Ser Asn Tyr Leu Ser Cys Arg Thr
```

3403

```
                  85                    90                    95
Thr Pro Ala Ile Val Pro Pro Lys Lys Phe Arg Gln Cys Pro Glu Pro
            100                   105                   110
Thr Ser Thr Ala Glu Lys Leu Gly Leu Lys Lys Gly Pro Arg Lys Ala
        115                   120                   125
Tyr Glu Leu Ser Gln Arg Ser Leu Asp Tyr Val Ala Gln Leu Arg Asp
    130                   135                   140
His Gly Lys Thr Val Gly Val Val Asp Thr Arg Lys Lys Thr Lys Leu
145                   150                   155                   160
Ile Ser Pro Gln Asn Leu Ser Val Arg Asn Asn Lys Lys Leu Leu Thr
                165                   170                   175
Ser Gln Glu Leu Gln Met Gln Arg Gln Ile Arg Pro Lys Ser Gln Lys
            180                   185                   190
Lys
```

```
<210> 4209
<211> 2661
<212> DNA
<213> Homo sapiens

<400> 4209
ntctcctgta cctgggcatc cagaaaaatg gtggtgatgg cgcgactttc gcggcccgag
60
cggccggacc ttgtcttcga ggaagaggac ctccccctatg aggaggaaat catgcggaac
120
caattctctg tcaaatgctg gcttcgctac atcgagttca aacagggcgc cccgaagccc
180
aggctcaatc agctatacga gcgggcactc aagctgctgc cctgcagcta caaactctgg
240
taccgatacc tgaaggcgcg tcgggcacag gtgaagcatc gctgtgtgac cgaccctgcc
300
tatgaagatg tcaacaactg tcatgagagg gcctttgtgt tcatgcacaa gatgcctcgt
360
ctgtggctag attactgcca gttcctcatg gaccaggggc gcgtcacaca cacccgccgc
420
accttcgacc gtgccctccg ggcactgccc atcacgcagc actctcgaat ttggccccctg
480
tatctgcgct tcctgcgctc acacccactg cctgagacag ctgtgcgagg ctatcggcgc
540
ttcctcaagc tgagtcctga gagtgcagag gagtacattg agtacctcaa gtcaagtgac
600
cggctggatg aggccgccca gcgcctggcc accgtggtga cgacgagcg tttcgtgtct
660
aaggccggca gtccaactaa ccagctgtgg cacgagctgt gcgacctcat ctcccagaat
720
ccggacaagg tacagtccct caatgtggac gccatcatcc gcgggggcct cacccgcttc
780
accgaccagc tgggcaagct ctggtgttct ctcgccgact actacatccg cagcggccat
840
ttcgagaagg ctcgggacgt gtacgaggag gccatccgga cagtgatgac cgtgcgggac
900
ttcacacagg tgtttgacag ctacgcccag ttcgaggaga gcatgatcgc tgcaaagatg
960
```

```
gagaccgcct cggagctggg tcgcgaggag gaggatgatg tggacctgga gctgcgcctg
1020
gcccgcttcg agcacctcat cagccggcgg cccctgcacc tcagcagcgt cttgctgcgc
1080
caaaacccac accacgtgca cgagtggcac aagcgtgtcg ccctgcacca gggccgcccc
1140
cgggagatca tcaacaccta cacagaggct gtgcagacgg tggacccctt caaggccaca
1200
ggcaagcccc acactctgtg ggtggcgttt gccaagtttt atgaggacaa cggacagctg
1260
gacgatgccc gtgtcatcct ggagaaggcc accaaggtga acttcaagca ggtggatgac
1320
ctggcaagcg tgtggtgtca gtgcggagag ctggagctcc gacacgagaa ctacgatgag
1380
gccttgcggc tgctgcgaaa ggccacggcg ctgcctccgc cgggccgagt atttgatggt
1440
tcagagcccg tgcagaaccg cgtgtacaag tcactgaagg tctggtccat gctcgccgac
1500
ctggaggaga gcctcggcac cttccagtcc accaaggccg tgtacgaccg catcctggac
1560
ctgcgtatcg caacacccca gatcgtcatc aactatgcca tgttcctgga ggagcacaag
1620
tacttcgagg agagcttcaa ggcgtacgag cgcggcatct cgctgttcaa gtggcccaac
1680
gtgtccgaca tctggagcac ctacctgaec aaattcattg cccgctatgg gggccgcaag
1740
ctggagcggg cacgggacct gtttgaacag gctctggacg gctgccccccc aaaatatgcc
1800
aagaccttgt acctgctgta cgcacagctg gaggaggagt ggggcctggc ccggcatgcc
1860
atggccgtgt acgagcgtgc caccagggcc gtggagcccg cccagcagta tgacatgttc
1920
aacatctaca tcaagcgggc ggccgagatc tatggggtca cccacacccg cggcatctac
1980
cagaaggcca ttgaggtgct gtcggacgag cacgcgcgtg agatgtgcct gcggtttgca
2040
gacatggagt gcaagctcgg ggagatcgac cgcgcccggg ctatctacag cttctgctcc
2100
cagatctgtg atccccggac aactggggca ttctggcaaa cgtggaagga ctttgaggtc
2160
cggcatggca acgaggacac catcagggag atgctgagga tacggcggag tgtgcaggcc
2220
acgtacaaca ctcaggtcaa cttcatggcc tcgcagatgc tcaaggtgtc gggcagtgcc
2280
acgggcaccg tgtctgacct ggctcccggg cagagcggca tggatgacat gaagttgctg
2340
gaacagagag cagaacagct ggcggctgag gcggagcgtg accagccctt gcgcgcccag
2400
agcaagatcc tgttcgtgag gagtgacgcc tcccgggagg agctggcaga gctggcacag
2460
caggtcaacc ccgaggagat ccagctgggc gaggacgagg acgaggacga gatggacctg
2520
gagcccaacg aggttcggct ggagcagcag agcgtgccag ccgcagtgtt tgggagcctg
2580
```

aaggaagact gacccgtccc tcccccatcc cccctcccca ccccctcccc aatacagcta
2640
cgtttgtaca tcaaaaaaaa a
2661

<210> 4210
<211> 863
<212> PRT
<213> Homo sapiens

<400> 4210
Xaa Ser Cys Thr Trp Ala Ser Arg Lys Met Val Val Met Ala Arg Leu
 1   5   10   15
Ser Arg Pro Glu Arg Pro Asp Leu Val Phe Glu Glu Glu Asp Leu Pro
            20   25   30
Tyr Glu Glu Glu Ile Met Arg Asn Gln Phe Ser Val Lys Cys Trp Leu
        35   40   45
Arg Tyr Ile Glu Phe Lys Gln Gly Ala Pro Lys Pro Arg Leu Asn Gln
    50   55   60
Leu Tyr Glu Arg Ala Leu Lys Leu Leu Pro Cys Ser Tyr Lys Leu Trp
65   70   75   80
Tyr Arg Tyr Leu Lys Ala Arg Arg Ala Gln Val Lys His Arg Cys Val
                85   90   95
Thr Asp Pro Ala Tyr Glu Asp Val Asn Asn Cys His Glu Arg Ala Phe
            100   105   110
Val Phe Met His Lys Met Pro Arg Leu Trp Leu Asp Tyr Cys Gln Phe
        115   120   125
Leu Met Asp Gln Gly Arg Val Thr His Thr Arg Arg Thr Phe Asp Arg
    130   135   140
Ala Leu Arg Ala Leu Pro Ile Thr Gln His Ser Arg Ile Trp Pro Leu
145   150   155   160
Tyr Leu Arg Phe Leu Arg Ser His Pro Leu Pro Glu Thr Ala Val Arg
                165   170   175
Gly Tyr Arg Arg Phe Leu Lys Leu Ser Pro Glu Ser Ala Glu Glu Tyr
            180   185   190
Ile Glu Tyr Leu Lys Ser Ser Asp Arg Leu Asp Glu Ala Ala Gln Arg
        195   200   205
Leu Ala Thr Val Val Asn Asp Glu Arg Phe Val Ser Lys Ala Gly Lys
    210   215   220
Ser Asn Tyr Gln Leu Trp His Glu Leu Cys Asp Leu Ile Ser Gln Asn
225   230   235   240
Pro Asp Lys Val Gln Ser Leu Asn Val Asp Ala Ile Ile Arg Gly Gly
            245   250   255
Leu Thr Arg Phe Thr Asp Gln Leu Gly Lys Leu Trp Cys Ser Leu Ala
            260   265   270
Asp Tyr Tyr Ile Arg Ser Gly His Phe Glu Lys Ala Arg Asp Val Tyr
    275   280   285
Glu Glu Ala Ile Arg Thr Val Met Thr Val Arg Asp Phe Thr Gln Val
    290   295   300
Phe Asp Ser Tyr Ala Gln Phe Glu Glu Ser Met Ile Ala Ala Lys Met
305   310   315   320
Glu Thr Ala Ser Glu Leu Gly Arg Glu Glu Glu Asp Asp Val Asp Leu
            325   330   335
Glu Leu Arg Leu Ala Arg Phe Glu His Leu Ile Ser Arg Arg Pro Leu

```
                340                 345                 350
His Leu Ser Ser Val Leu Leu Arg Gln Asn Pro His His Val His Glu
        355                 360                 365
Trp His Lys Arg Val Ala Leu His Gln Gly Arg Pro Arg Glu Ile Ile
    370                 375                 380
Asn Thr Tyr Thr Glu Ala Val Gln Thr Val Asp Pro Phe Lys Ala Thr
385                 390                 395                 400
Gly Lys Pro His Thr Leu Trp Val Ala Phe Ala Lys Phe Tyr Glu Asp
                405                 410                 415
Asn Gly Gln Leu Asp Asp Ala Arg Val Ile Leu Glu Lys Ala Thr Lys
            420                 425                 430
Val Asn Phe Lys Gln Val Asp Asp Leu Ala Ser Val Trp Cys Gln Cys
        435                 440                 445
Gly Glu Leu Glu Leu Arg His Glu Asn Tyr Asp Glu Ala Leu Arg Leu
    450                 455                 460
Leu Arg Lys Ala Thr Ala Leu Pro Pro Pro Gly Arg Val Phe Asp Gly
465                 470                 475                 480
Ser Glu Pro Val Gln Asn Arg Val Tyr Lys Ser Leu Lys Val Trp Ser
                485                 490                 495
Met Leu Ala Asp Leu Glu Glu Ser Leu Gly Thr Phe Gln Ser Thr Lys
.       ..      500                 505                 510
Ala Val Tyr Asp Arg Ile Leu Asp Leu Arg Ile Ala Thr Pro Gln Ile
            515                 520                 525
Val Ile Asn Tyr Ala Met Phe Leu Glu Glu His Lys Tyr Phe Glu Glu
        530                 535                 540
Ser Phe Lys Ala Tyr Glu Arg Gly Ile Ser Leu Phe Lys Trp Pro Asn
545                 550                 555                 560
Val Ser Asp Ile Trp Ser Thr Tyr Leu Thr Lys Phe Ile Ala Arg Tyr
                565                 570                 575
Gly Gly Arg Lys Leu Glu Arg Ala Arg Asp Leu Phe Glu Gln Ala Leu
            580                 585                 590
Asp Gly Cys Pro Pro Lys Tyr Ala Lys Thr Leu Tyr Leu Leu Tyr Ala
        595                 600                 605
Gln Leu Glu Glu Glu Trp Gly Leu Ala Arg His Ala Met Ala Val Tyr
    610                 615                 620
Glu Arg Ala Thr Arg Ala Val Glu Pro Ala Gln Gln Tyr Asp Met Phe
625                 630                 635                 640
Asn Ile Tyr Ile Lys Arg Ala Ala Glu Ile Tyr Gly Val Thr His Thr
                645                 650                 655
Arg Gly Ile Tyr Gln Lys Ala Ile Glu Val Leu Ser Asp Glu His Ala
            660                 665                 670
Arg Glu Met Cys Leu Arg Phe Ala Asp Met Glu Cys Lys Leu Gly Glu
        675                 680                 685
Ile Asp Arg Ala Arg Ala Ile Tyr Ser Phe Cys Ser Gln Ile Cys Asp
    690                 695                 700
Pro Arg Thr Thr Gly Ala Phe Trp Gln Thr Trp Lys Asp Phe Glu Val
705                 710                 715                 720
Arg His Gly Asn Glu Asp Thr Ile Arg Glu Met Leu Arg Ile Arg Arg
                725                 730                 735
Ser Val Gln Ala Thr Tyr Asn Thr Gln Val Asn Phe Met Ala Ser Gln
            740                 745                 750
Met Leu Lys Val Ser Gly Ser Ala Thr Gly Thr Val Ser Asp Leu Ala
        755                 760                 765
Pro Gly Gln Ser Gly Met Asp Asp Met Lys Leu Leu Glu Gln Arg Ala
```

```
        770                    775                    780
Glu Gln Leu Ala Ala Glu Ala Glu Arg Asp Gln Pro Leu Arg Ala Gln
785                    790                    795                    800
Ser Lys Ile Leu Phe Val Arg Ser Asp Ala Ser Arg Glu Glu Leu Ala
                805                    810                    815
Glu Leu Ala Gln Gln Val Asn Pro Glu Glu Ile Gln Leu Gly Glu Asp
                820                    825                    830
Glu Asp Glu Asp Glu Met Asp Leu Glu Pro Asn Glu Val Arg Leu Glu
        835                    840                    845
Gln Gln Ser Val Pro Ala Ala Val Phe Gly Ser Leu Lys Glu Asp
        850                    855                    860
```

<210> 4211
<211> 456
<212> DNA
<213> Homo sapiens

<400> 4211
```
ggggatcgct agcccccagc ttctcagaac taaatatgaa agctcttgct cgtctacgct
60
tagttacaac agactccctg ggcctactgt aggggtcaag agcagatttc cagactctca
120
agctggaaaa gagacgctcc acactgcgac gacaaccaac acatgggaca agctgagaaa
180
gtgcactcag gacttcgcgt gatgtcacca ccatggcaat acttagatcc tgttgcttaa
240
gcataccatg tcgctgaaag agggaaagaa aatgaaagag cgtcctttaa aaagacgtaa
300
aattacactt tcactactac tggttcctat ccttgtgcag taaagtacaa cctggccagg
360
gtttaccagc tctacctgca actgagtcag aaaggcaaag tagtcagctt tgtccatgct
420
gtacggaatt tgctccacaa acccccttgc tctaga
456
```

<210> 4212
<211> 81
<212> PRT
<213> Homo sapiens

<400> 4212
```
Met Leu Lys Gln Gln Asp Leu Ser Ile Ala Met Val Val Thr Ser Arg
1                 5                  10                     15
Glu Val Leu Ser Ala Leu Ser Gln Leu Val Pro Cys Val Gly Cys Arg
                20                     25                     30
Arg Ser Val Glu Arg Leu Phe Ser Ser Leu Arg Val Trp Lys Ser Ala
            35                     40                     45
Leu Asp Pro Tyr Ser Arg Pro Arg Glu Ser Val Val Thr Lys Arg Arg
        50                     55                     60
Arg Ala Arg Ala Phe Ile Phe Ser Ser Glu Lys Leu Gly Ala Ser Asp
65                     70                     75                     80
Pro
```

<210> 4213
<211> 383
<212> DNA
<213> Homo sapiens

<400> 4213
nacgcgtacc tgtgccagcg cgcgcgcttc ttcgcagaga acgagggcct agacgactac
60
atggaggcac gcgagggcat gcacctcaag aacgtggact ccgtgagtt catggtggcc
120
ttcccggacc cggcccggcc gccctggtac gcctgctcgt cggccttctg ggccgcggcg
180
ctgctcacgc tgtcgtggcc gctgcgagtg ctggccgagt accgcacggc ctacgcgcac
240
taccacgtgg agaagctgtt tggcctggag ggcccgggct cggccagcag cgcaggcggt
300
ggcctcagcc ccagcgatga gctgctgccc ccgctcaccc accgcctgcc gcgggtcaac
360
acagtagaca gcacggagct cgg
383

<210> 4214
<211> 127
<212> PRT
<213> Homo sapiens

<400> 4214
Xaa Ala Tyr Leu Cys Gln Arg Ala Arg Phe Phe Ala Glu Asn Glu Gly
1   5   10   15
Leu Asp Asp Tyr Met Glu Ala Arg Glu Gly Met His Leu Lys Asn Val
            20   25   30
Asp Phe Arg Glu Phe Met Val Ala Phe Pro Asp Pro Ala Arg Pro Pro
        35   40   45
Trp Tyr Ala Cys Ser Ser Ala Phe Trp Ala Ala Ala Leu Leu Thr Leu
    50   55   60
Ser Trp Pro Leu Arg Val Leu Ala Glu Tyr Arg Thr Ala Tyr Ala His
65   70   75   80
Tyr His Val Glu Lys Leu Phe Gly Leu Glu Gly Pro Gly Ser Ala Ser
                85   90   95
Ser Ala Gly Gly Gly Leu Ser Pro Ser Asp Glu Leu Leu Pro Pro Leu
            100   105   110
Thr His Arg Leu Pro Arg Val Asn Thr Val Asp Ser Thr Glu Leu
        115   120   125

<210> 4215
<211> 939
<212> DNA
<213> Homo sapiens

<400> 4215
nggtacctcg gctgaataaa aattcaaaaa aacagcaatg gacaggaact tgagaagacg
60
ctggaagaaa gcaaagaaat ggatatcaaa cgtaaagaaa ataaaggcaa tgatacccct
120

```
ttggccctag agagtacaaa cactgaaaag gagacaagcc tggaggaaac aaaaatcggg
180
gagatcctga tccagggctt gacagaagat atggtgactg ttttaatccg ggcctgcgtg
240
agcatgctgg gagtccctgt ggacccagat actttgcatg ccaccctttg tttctgtttg
300
agggtcactc ggggcccca attagccatg atgtttgcag aactgaagaa tacccgcatg
360
atcttgaatt tgacccagag ctcaggcttc aatgggttta ctcccctggt caccttctc
420
ttaagacaca tcattgagga cccctgtacc cttcgtcata ccatggaaaa ggttgttcgc
480
tcagcagcta caagtggagc tggtagcact acctctggtg ttgtgtctgg cagcctcggc
540
tctcgggaga tcaactacat ccttcgtgtc cttgggccag ccgcatgccg caatccagac
600
atattcacag aagtggccaa ctgctgtatc cgcatcgccc ttcctgcccc tcgaggctca
660
ggaactgctt cagatgatga atttgagaat cttagaatta aaggccctaa tgctgtacag
720
ctggtgaaga ccacccctttt gaagccctca cctctgcctg tcatccctga tactatcaag
780
gaagtgatct atgatatgct gaatgctctg gctgcatacc atgctccaga ggaagcagat
840
aaatctgatc ctaaacctgg ggttatgacc caagaggttg gccagctcct gcaagacatg
900
ggtgatgatg tataccagca gtaccggtca cttacgcgt
939
```

<210> 4216
<211> 287
<212> PRT
<213> Homo sapiens

<400> 4216
```
Met Asp Ile Lys Arg Lys Glu Asn Lys Gly Asn Asp Thr Pro Leu Ala
 1               5                  10                  15
Leu Glu Ser Thr Asn Thr Glu Lys Glu Thr Ser Leu Glu Glu Thr Lys
                20                  25                  30
Ile Gly Glu Ile Leu Ile Gln Gly Leu Thr Glu Asp Met Val Thr Val
            35                  40                  45
Leu Ile Arg Ala Cys Val Ser Met Leu Gly Val Pro Val Asp Pro Asp
        50                  55                  60
Thr Leu His Ala Thr Leu Cys Phe Cys Leu Arg Val Thr Arg Gly Pro
65                  70                  75                  80
Gln Leu Ala Met Met Phe Ala Glu Leu Lys Asn Thr Arg Met Ile Leu
                85                  90                  95
Asn Leu Thr Gln Ser Ser Gly Phe Asn Gly Phe Thr Pro Leu Val Thr
                100                 105                 110
Leu Leu Leu Arg His Ile Ile Glu Asp Pro Cys Thr Leu Arg His Thr
            115                 120                 125
Met Glu Lys Val Val Arg Ser Ala Ala Thr Ser Gly Ala Gly Ser Thr
        130                 135                 140
Thr Ser Gly Val Val Ser Gly Ser Leu Gly Ser Arg Glu Ile Asn Tyr
```

```
145                150                155                160
Ile Leu Arg Val Leu Gly Pro Ala Ala Cys Arg Asn Pro Asp Ile Phe
                   165                170                175
Thr Glu Val Ala Asn Cys Cys Ile Arg Ile Ala Leu Pro Ala Pro Arg
               180                185                190
Gly Ser Gly Thr Ala Ser Asp Asp Glu Phe Glu Asn Leu Arg Ile Lys
           195                200                205
Gly Pro Asn Ala Val Gln Leu Val Lys Thr Thr Pro Leu Lys Pro Ser
       210                215                220
Pro Leu Pro Val Ile Pro Asp Thr Ile Lys Glu Val Ile Tyr Asp Met
225                230                235                240
Leu Asn Ala Leu Ala Ala Tyr His Ala Pro Glu Glu Ala Asp Lys Ser
               245                250                255
Asp Pro Lys Pro Gly Val Met Thr Gln Glu Val Gly Gln Leu Leu Gln
           260                265                    270Met Gly Asp Asp
Val Tyr Gln Gln Tyr Arg Ser Leu Thr Arg
           275                280                285
```

<210> 4217
<211> 619
<212> DNA
<213> Homo sapiens

<400> 4217
acacacacac gcacacaaaa ctcagccaca ggctcaccag ggtctctctc aacatgcaca
60
catacacaca cacacccctc agtcataggc tcacaagagt ctctcttgtc tctctctcat
120
acatacacac acacacacaa ccagccacag gcccacaaag gtgtctctct ctttgtccct
180
gtctgctctc tcgcactcac acacacacat ctcagccaca ggcccaccag agtctgtctg
240
tctctttgtc tctctcactc tctctcacac acatacacct cagccacagg cccacaaggg
300
tctctctcct tgtccctggc tcctctctct cgcacactcc cacacacaca catacagctc
360
agccacaggc ccacgagggt gtctctctct ctctctctct ctcacacaca cacacacaca
420
cacacacgcc tgtgcagctc cacaggggcc tggggcagga gacagatctg aatacacata
480
ccaccctgtg ctgtgagtgg ccactcccat ccaacaactg agactttctg ttactgggcc
540
aaggttttct gccaaactca cttcccttat aatgaatgaa ttatccctca gaaggttcca
600
cagtcctccc ctggcgcgc
619

<210> 4218
<211> 155
<212> PRT
<213> Homo sapiens

<400> 4218
Met His Thr Tyr Thr His Thr Pro Leu Ser His Arg Leu Thr Arg Val

```
      1                    5                    10                   15
      Ser Leu Val Ser Leu Ser Tyr Ile His Thr His Thr Gln Pro Ala Thr
                      20                   25                   30
      Gly Pro Gln Arg Cys Leu Ser Leu Cys Pro Cys Leu Leu Ser Arg Thr
                      35                   40                   45
      His Thr His Thr Ser Gln Pro Gln Ala His Gln Ser Leu Ser Val Ser
                      50                   55                   60
      Leu Ser Leu Ser Leu Ser Leu Thr His Ile His Leu Ser His Arg Pro
      65                   70                   75                   80
      Thr Arg Val Ser Leu Leu Val Pro Gly Ser Ser Leu Ser His Thr Pro
                      85                   90                   95
      Thr His Thr His Thr Ala Gln Pro Gln Ala His Glu Gly Val Ser Leu
                      100                  105                  110
      Ser Leu Ser Leu Ser His Thr His Thr His Thr His Thr Pro Val Gln
                      115                  120                  125
      Leu His Arg Gly Leu Gly Gln Glu Thr Asp Leu Asn Thr His Thr Thr
                      130                  135                  140
      Leu Cys Cys Glu Trp Pro Leu Pro Ser Asn Asn
      145                  150                  155
```

```
<210> 4219
<211> 774
<212> DNA
<213> Homo sapiens
```

```
<400> 4219
ngcggccgcg cacctgctcc cgtcgcccta cagcaagatc acgcccccgc ggaggcccca
60
ccgctgcagc agcggccacg gcagcgacaa cagcagcgtg ctgagcgggg agctcccgcc
120
ggccatgggg aagacggccc tgttctacca cagcggcggc agcagcggct acgagagcgt
180
gatgcgggac agcgaggcca ccggcagcgc gtcctcggcg caggactcca cgagcgagaa
240
cagcagctcc gtgggcggca ggtgccggag cctcaagacc ccgaagaaac gctccaatcc
300
aggttctcag agacggaggc ttatcccagc actatccctg gacacctctt ccctgtgag
360
aaaacccccc aacagcacag gcgtccgctg ggtggatggn ncccttgcg gagcagcccg
420
aggggccttg gggaaccttt gagattaaag tctnatgaaa tcgatgacgt ggagcgcctg
480
cagcggcgac gaggggggtgc agcaaggag gccatgtgct tcaatgcaaa gctgaagatt
540
ctggaacacc gccagcagag gatcgccgag gtccgcgcga agtacgagtg gctgatgaag
600
gagctggagg cgaccaaaca gtatctgatg ctggatccca acaagtggct cagtgaattt
660
gacttggagc aggtttggga gctggattcc ctggagtacc tggaggcact ggagtgtgtg
720
acggagcgcc tggagagccg tgtcaacttc tgcaaggccc atctcatgat gctc
774
```

```
<210> 4220
```

<211> 258
<212> PRT
<213> Homo sapiens

<400> 4220
```
Xaa Gly Arg Ala Pro Ala Pro Val Ala Leu Gln Gln Asp His Ala Pro
 1               5                  10                  15
Ala Glu Ala Pro Pro Leu Gln Gln Arg Pro Arg Gln Arg Gln Gln Gln
            20                  25                  30
Arg Ala Glu Arg Gly Ala Pro Ala Gly His Gly Glu Asp Gly Pro Val
        35                  40                  45
Leu Pro Gln Arg Arg Gln Gln Arg Leu Arg Glu Arg Asp Ala Gly Gln
    50                  55                  60
Arg Gly His Arg Gln Arg Val Leu Gly Ala Gly Leu His Glu Arg Glu
65                  70                  75                  80
Gln Gln Leu Arg Gly Arg Gln Val Pro Glu Pro Gln Asp Pro Glu Glu
                85                  90                  95
Thr Leu Gln Ser Arg Phe Ser Glu Thr Glu Ala Tyr Pro Ser Thr Ile
                100                 105                 110
Pro Gly His Leu Phe Pro Cys Glu Lys Thr Pro Gln Gln His Arg Arg
        .115 ..                 120                 125
Pro Leu Gly Gly Trp Xaa Pro Leu Arg Ser Ser Pro Arg Gly Leu Gly
    130                 135                 140
Glu Pro Leu Arg Leu Lys Ser Xaa Glu Ile Asp Asp Val Glu Arg Leu
145                 150                 155                 160
Gln Arg Arg Arg Gly Gly Ala Ser Lys Glu Ala Met Cys Phe Asn Ala
                165                 170                 175
Lys Leu Lys Ile Leu Glu His Arg Gln Gln Arg Ile Ala Glu Val Arg
                180                 185                 190
Ala Lys Tyr Glu Trp Leu Met Lys Glu Leu Glu Ala Thr Lys Gln Tyr
                195                 200                 205
Leu Met Leu Asp Pro Asn Lys Trp Leu Ser Glu Phe Asp Leu Glu Gln
        210                 215                 220
Val Trp Glu Leu Asp Ser Leu Glu Tyr Leu Glu Ala Leu Glu Cys Val
225                 230                 235                 240
Thr Glu Arg Leu Glu Ser Arg Val Asn Phe Cys Lys Ala His Leu Met
                245                 250                 255
Met Leu
```

<210> 4221
<211> 789
<212> DNA
<213> Homo sapiens

<400> 4221
```
aatgtgaaga ggattaaaga ataaagaaaa aacaaaaaag tcttatacta aaataagaaa
60
tcagccccat cttggcacag ttctcatgca gaatattgca cccagtgtga actaacgcta
120
gaagcttcaa actgtataaa tttaaatgta tttgcatatt ataaaaataa agataaacat
180
atacatattt tacactagtt atggaacagc aatgaacgtc agtcgatccc tctttcacat
240
```

3413

```
ttaacagaac tgaaatctga gtgctctaaa tactgccacc tgtactgtaa ctatggctta
300
tatgtgcacg gaaaacaaaa tccctgagaa gccattcgac ttttttttttt tttctttttct
360
tcaagtagcg cgctccttgg aggatcacag ttctgaggtt caggttgtaa aacatttgct
420
ccatgttctc gtccatgctt ccccccacca cccctcccc acctcttccc cagtcgtcca
480
aaaagcaccc tgcaagcacg cgttgtcact caagttcaca gaacacgctg gggtgagtgc
540
agagggtctg ccaggtgcaa aagatggtcc aggtgttcag atgctctctt ttctccatgg
600
aaattccaca gccacaaacg tcactggttt ctgtgctttt caccaacatt cttcccttaa
660
aaattggtgc tcctaaagtc acagtttggg tacagtaaaa atgatggcat aaggaaaaga
720
agcactatct tttccactta attttccaag aaagtatgaa gatacttgga acaggggctg
780
atcacagtc
789
```

<210> 4222
<211> 127
<212> PRT
<213> Homo sapiens

<400> 4222

```
Met Ala Tyr Met Cys Thr Glu Asn Lys Ile Pro Glu Lys Pro Phe Asp
1               5                   10                  15
Phe Phe Phe Phe Ser Phe Leu Gln Val Ala Arg Ser Leu Glu Asp His
            20                  25                  30
Ser Ser Glu Val Gln Val Val Lys His Leu Leu His Val Leu Val His
            35                  40                  45
Ala Ser Pro His His Pro Leu Pro Thr Ser Ser Pro Val Val Gln Lys
        50                  55                  60
Ala Pro Cys Lys His Ala Leu Ser Leu Lys Phe Thr Glu His Ala Gly
65                  70                  75                  80
Val Ser Ala Glu Gly Leu Pro Gly Ala Lys Asp Gly Pro Gly Val Gln
                85                  90                  95
Met Leu Ser Phe Leu His Gly Asn Ser Thr Ala Thr Asn Val Thr Gly
                100                 105                 110
Phe Cys Ala Phe His Gln His Ser Ser Leu Lys Asn Trp Cys Ser
        115                 120                 125
```

<210> 4223
<211> 852
<212> DNA
<213> Homo sapiens

<400> 4223

```
atcctggacc agggctacta ctcggagcga gacacaagca acgtggtacg gcaagtcctg
60
gaggccgtgg cctatttgca ctcactcaag atcgtgcaca ggaatctcaa gctggagaac
120
```

ctggtttact acaaccggct gaagaactcg aagattgtca tcagtgactt ccatctggct
180
aagctagaaa atggcctcat caaggagccc tgtgggaccc ccgaagattt tgccccccaa
240
ggggaaggcc ggcagcggta tggacgccct gtggactgct gggccattgg agtcatcatg
300
tacatcctgc tttcaggcaa tccacctttc tatgaggagg tggaagaaga tgattatgag
360
aaccatgata agaatctctt ccgcaagatc ctggctggtg actatgagtt tgactctcca
420
tattgggatg atatttcgca ggcagccaaa gacctggtca caaggctgat ggaggtggag
480
caagaccagc ggatcactgc agaagaggcc atctcccatg agtggatttc tggcaatgct
540
gcttctgata agaacatcaa ggatggtgtc tgtgcccaga ttgaaaagaa ctttgccagg
600
gccaagtgga agaaggctgt ccgagtgacc accctcatga acggctccg ggcaccagag
660
cagtccagca cggctgcagc ccagtcggcc tcagccacag acactgccac ccccgggggct
720
gcagaccgta gtgccacccc agccacagat ggaagtgcca ccccagccac tgatggcagt
780
gtcaccccag ccaccgatgg aagcatcact ccagccattg atgggagtgt caccccagcc
840
actgacagga gc
852

<210> 4224
<211> 284
<212> PRT
<213> Homo sapiens

<400> 4224
Ile Leu Asp Gln Gly Tyr Tyr Ser Glu Arg Asp Thr Ser Asn Val Val
1   5   10   15
Arg Gln Val Leu Glu Ala Val Ala Tyr Leu His Ser Leu Lys Ile Val
            20   25   30
His Arg Asn Leu Lys Leu Glu Asn Leu Val Tyr Tyr Asn Arg Leu Lys
        35   40   45
Asn Ser Lys Ile Val Ile Ser Asp Phe His Leu Ala Lys Leu Glu Asn
    50   55   60
Gly Leu Ile Lys Glu Pro Cys Gly Thr Pro Glu Asp Phe Ala Pro Gln
65   70   75   80
Gly Glu Gly Arg Gln Arg Tyr Gly Arg Pro Val Asp Cys Trp Ala Ile
                85   90   95
Gly Val Ile Met Tyr Ile Leu Leu Ser Gly Asn Pro Pro Phe Tyr Glu
                100   105   110
Glu Val Glu Glu Asp Asp Tyr Glu Asn His Asp Lys Asn Leu Phe Arg
            115   120   125
Lys Ile Leu Ala Gly Asp Tyr Glu Phe Asp Ser Pro Tyr Trp Asp Asp
        130   135   140
Ile Ser Gln Ala Ala Lys Asp Leu Val Thr Arg Leu Met Glu Val Glu
145   150   155   160
Gln Asp Gln Arg Ile Thr Ala Glu Glu Ala Ile Ser His Glu Trp Ile

```
                  165                    170                    175
Ser Gly Asn Ala Ala Ser Asp Lys Asn Ile Lys Asp Gly Val Cys Ala
            180                    185                    190
Gln Ile Glu Lys Asn Phe Ala Arg Ala Lys Trp Lys Lys Ala Val Arg
        195                    200                    205
Val Thr Thr Leu Met Lys Arg Leu Arg Ala Pro Glu Gln Ser Ser Thr
    210                    215                    220
Ala Ala Ala Gln Ser Ala Ser Ala Thr Asp Thr Ala Thr Pro Gly Ala
225                    230                    235                    240
Ala Asp Arg Ser Ala Thr Pro Ala Thr Asp Gly Ser Ala Thr Pro Ala
            245                    250                    255
Thr Asp Gly Ser Val Thr Pro Ala Thr Asp Gly Ser Ile Thr Pro Ala
            260                    265                    270
Ile Asp Gly Ser Val Thr Pro Ala Thr Asp Arg Ser
            275                    280
```

```
<210> 4225
<211> 470
<212> DNA
<213> Homo sapiens

<400> 4225
nntgtacaag aaagtgagcc agtcatcgtc aatattcaag tgatggatgc aaatgataac
60
acgccaacct tccctgaaat atcctatgat gtgtatgttt atacagacat gagacctggg
120
gacagggtcc tacagttaac tgcagtcgac gcagacgaag ggtcaaatgg ggagatcaca
180
tatgaaatcc ttgttggggc tcaggagac ttcatcatca ataaaacaac agggcttatc
240
accatcgctc cagggtgga aatgatagtc gggcggactt acgcactccc ggtccaagca
300
gcggataatg ctcctcctgc aaagcaaagg actcccatct gcactgtgta tattgaagtg
360
cttccaccaa ataatcaaag ccctcctcgc ttcccacagc tgatgtatag ccttgaaatt
420
agtgaagcca tgagggttgg tgctgtttta ttaaatctac aggcaactga
470

<210> 4226
<211> 156
<212> PRT
<213> Homo sapiens

<400> 4226
Xaa Val Gln Glu Ser Glu Pro Val Ile Val Asn Ile Gln Val Met Asp
1                 5                    10                    15
Ala Asn Asp Asn Thr Pro Thr Phe Pro Glu Ile Ser Tyr Asp Val Tyr
            20                    25                    30
Val Tyr Thr Asp Met Arg Pro Gly Asp Arg Val Leu Gln Leu Thr Ala
        35                    40                    45
Val Asp Ala Asp Glu Gly Ser Asn Gly Glu Ile Thr Tyr Glu Ile Leu
    50                    55                    60
Val Gly Ala Gln Gly Asp Phe Ile Ile Asn Lys Thr Thr Gly Leu Ile
```

```
65                     70              75                  80
Thr Ile Ala Pro Gly Val Glu Met Ile Val Gly Arg Thr Tyr Ala Leu
                      85                  90                  95
Pro Val Gln Ala Ala Asp Asn Ala Pro Pro Ala Lys Gln Arg Thr Pro
              100                 105                 110
Ile Cys Thr Val Tyr Ile Glu Val Leu Pro Pro Asn Asn Gln Ser Pro
              115                 120                 125
Pro Arg Phe Pro Gln Leu Met Tyr Ser Leu Glu Ile Ser Glu Ala Met
          130                 135                 140
Arg Val Gly Ala Val Leu Leu Asn Leu Gln Ala Thr
145                 150                 155
```

```
<210> 4227
<211> 1199
<212> DNA
<213> Homo sapiens

<400> 4227
nnaagcttat ggccagtgtt aatttgttat ttcttaaata actttccctt tcatttttaa
60
attataaatt taacttctaa catgttttat ggttaaaatt gtactttttt cctttagcga
120
cattcaaatg catcacaatc actttgtgaa attgttcgcc tgagcagaga ccagatgtta
180
caaattcaga acagtacaga gcccgacccc ctgcttgcca ctctagaaaa gcaagaaatt
240
atagagcagc ttctatcaaa tattttccac aaggagaaaa atgagtcagc catagtcagt
300
gcaatccaga tattgctgac tttacttgag acacgacgac caacatttga aggccatata
360
gagatctgcc caccaggcat gagccattca gcttgttcag taaacaagag tgttctagaa
420
gccatcagag aagacttgg atcttttcat gaactcctgc tggagccacc caagaaaagt
480
gtgatgaaga ccacatgggg tgtgctggat cctcctgtgg ggaatacccg gttgaatgtc
540
attaggttga tatccagcct gcttcaaacc aataccagca gtataaatgg ggaccttatg
600
gagctgaata gcattggagt catattgaac atgttcttca agtatacatg gaataacttt
660
ttgcatacac aagtggaaat ttgtattgca ctgattcttg caagtccttt tgaaaacaca
720
gaaaatgcca caattaccga tcaagactcc actggtgata atttgttatt aaaacatctt
780
ttccaaaaat gtcaattaat agaacgaata cttgaagcct gggaaatgaa tgagaagaaa
840
caggctgagg gaggaagacg gcatggttac atgggacacc taacgaggat agctaactgt
900
atcgtgcaca gcactgacaa gggccccaac agtgcattag tgcagcagct tatcaaaggt
960
aagttatttg tgaaatttga attacatttt tgttgggttg caggaaggat ttaagggtca
1020
agtagaaatg catgtagcat tttaatagt gatttgtggg acttctttat atttggcaaa
1080
```

ttatgtattt gaatgaggtt cttgagaatg tgtttgaaca gggttgtttt ttgggttgta
1140
ttttatgttc atgtagttac agaccattcc ataagcattg gcaggcttgg ctggattca
1199

<210> 4228
<211> 298
<212> PRT
<213> Homo sapiens

<400> 4228

```
Arg His Ser Asn Ala Ser Gln Ser Leu Cys Glu Ile Val Arg Leu Ser
 1               5                  10                  15
Arg Asp Gln Met Leu Gln Ile Gln Asn Ser Thr Glu Pro Asp Pro Leu
            20                  25                  30
Leu Ala Thr Leu Glu Lys Gln Glu Ile Ile Glu Gln Leu Leu Ser Asn
        35                  40                  45
Ile Phe His Lys Glu Lys Asn Glu Ser Ala Ile Val Ser Ala Ile Gln
    50                  55                  60
Ile Leu Leu Thr Leu Leu Glu Thr Arg Arg Pro Thr Phe Glu Gly His
65                  70                  75                  80
Ile Glu Ile Cys Pro Pro Gly Met Ser His Ser Ala Cys Ser Val Asn
                85                  90                  95
Lys Ser Val Leu Glu Ala Ile Arg Gly Arg Leu Gly Ser Phe His Glu
            100                 105                 110
Leu Leu Leu Glu Pro Pro Lys Lys Ser Val Met Lys Thr Thr Trp Gly
        115                 120                 125
Val Leu Asp Pro Pro Val Gly Asn Thr Arg Leu Asn Val Ile Arg Leu
    130                 135                 140
Ile Ser Ser Leu Leu Gln Thr Asn Thr Ser Ser Ile Asn Gly Asp Leu
145                 150                 155                 160
Met Glu Leu Asn Ser Ile Gly Val Ile Leu Asn Met Phe Phe Lys Tyr
                165                 170                 175
Thr Trp Asn Asn Phe Leu His Thr Gln Val Glu Ile Cys Ile Ala Leu
            180                 185                 190
Ile Leu Ala Ser Pro Phe Glu Asn Thr Glu Asn Ala Thr Ile Thr Asp
        195                 200                 205
Gln Asp Ser Thr Gly Asp Asn Leu Leu Leu Lys His Leu Phe Gln Lys
    210                 215                 220
Cys Gln Leu Ile Glu Arg Ile Leu Glu Ala Trp Glu Met Asn Glu Lys
225                 230                 235                 240
Lys Gln Ala Glu Gly Gly Arg Arg His Gly Tyr Met Gly His Leu Thr
                245                 250                 255
Arg Ile Ala Asn Cys Ile Val His Ser Thr Asp Lys Gly Pro Asn Ser
                260                 265                 270
Ala Leu Val Gln Gln Leu Ile Lys Gly Lys Leu Phe Val Lys Phe Glu
        275                 280                 285
Leu His Phe Cys Trp Val Ala Gly Arg Ile
        290                 295
```

<210> 4229
<211> 1612
<212> DNA
<213> Homo sapiens

<400> 4229

ncgggggtct ccatcctgga ccaggacctg gactacctgt ccgaaggcct cgaaggccga
60

tcccaaagcc ccgtggccct gctctttgat gcccttctac gcccagacac agactttggg
120

ggaaacatga agtcggtcct cacctggaag caccggaagg agcacgccat cccccacgtg
180

gttctgggcc ggaacctccc cggggagcc tggcactcca tcgaaggctc catggtgatc
240

ctgagccaag gccagtggat ggggctcccg gacctggagg tcaaggactg gatgcagaag
300

aagcgaagag gtcttcgcaa cagccgggcc actgccgggg acatcgccca ctactacagg
360

gactacgtgg tcaagaaggg tctggggcat aactttgtgt ccggtgctgt agtcacagcc
420

gtggagtggg ggacccccga tcccagcagc tgtggggccc aggactccag cccctcttc
480

caggtgagcg gcttcctgac caggaaccag gcccagcagc ccttctcgct gtgggcccgc
540

aacgtggtcc tcgccacagg cacgttcgac agcccggccc ggctgggcat ccccggggag
600

gccctgccct tcatccacca tgagctgtct gccctggagg ccgccacaag ggtgggtgcg
660

gtgaccccgg cctcagaccc tgtcctcatc attggcgcgg ggctgtcagc ggccgacgcc
720

gtcctctacg cccgccacta caacatcccg gtgatccatg ccttccgccg ggccgtggac
780

gaccctggcc tggtgttcaa ccagctgccc aagatgctgt accccgagta ccacaaggtg
840

caccagatga tgcgggagca gtccatcctg tcgcccagcc cctatgaggg ttaccgcagc
900

ctccccaggc accagctgct gtgcttcaag gaagactgcc aggccgtgtt ccaggacctc
960

gagggtgtcg agaaggtgtt tggggtctcc ctggtgctgg tcctcatcgg ctcccacccc
1020

gacctctcct tcctgcctgg ggcaggggct gactttgcag tggatcctga ccagccgctg
1080

agcgccaaga ggaaccccat tgacgtggac cccttcacct accagagcac ccgccaggag
1140

ggcctgtacg ccatgggggcc gctggccggg gacaacttcg tgaggtttgt gcaggggggc
1200

gccttggctg tggccagctc cctgctaagg aaggagacca ggaagccacc ctaacactcg
1260

gccagacccg ctggctccca ggccctgaga ggacagagat gaccacatcc ctgctggatg
1320

caggaccgt ccaaagatgc cccgggggagg ggtgtcagcc cacgttgctg gcctttgggg
1380

tcaagaggag tagggatccc aggctgccct ggacttagac cagtgtctga ggttggactt
1440

agaccagtgt gtgaggtggt aacagcggcc gcagcagggg gttggcctag acctgggatt
1500

tgtggggaaa gctgctggtg tgaccagctg agcacccagc caggagacct gcagccctgc
1560

```
gccttccaga agcaggtccc aaataaagcc agtgcccacc tgaaaaaaaa aa
1612


<210> 4230
<211> 417
<212> PRT
<213> Homo sapiens


<400> 4230
Xaa Gly Val Ser Ile Leu Asp Gln Asp Leu Asp Tyr Leu Ser Glu Gly
  1               5                  10                  15
Leu Glu Gly Arg Ser Gln Ser Pro Val Ala Leu Leu Phe Asp Ala Leu
             20                  25                  30
Leu Arg Pro Asp Thr Asp Phe Gly Gly Asn Met Lys Ser Val Leu Thr
         35                  40                  45
Trp Lys His Arg Lys Glu His Ala Ile Pro His Val Val Leu Gly Arg
     50                  55                  60
Asn Leu Pro Gly Gly Ala Trp His Ser Ile Glu Gly Ser Met Val Ile
 65                  70                  75                  80
Leu Ser Gln Gly Gln Trp Met Gly Leu Pro Asp Leu Glu Val Lys Asp
                 85                  90                  95
Trp Met Gln Lys Lys Arg Arg Gly Leu Arg Asn Ser Arg Ala Thr Ala
                100                 105                 110
Gly Asp Ile Ala His Tyr Tyr Arg Asp Tyr Val Val Lys Lys Gly Leu
            115                 120                 125
Gly His Asn Phe Val Ser Gly Ala Val Val Thr Ala Val Glu Trp Gly
            130                 135                 140
Thr Pro Asp Pro Ser Ser Cys Gly Ala Gln Asp Ser Ser Pro Leu Phe
145                 150                 155                 160
Gln Val Ser Gly Phe Leu Thr Arg Asn Gln Ala Gln Gln Pro Phe Ser
                165                 170                 175
Leu Trp Ala Arg Asn Val Val Leu Ala Thr Gly Thr Phe Asp Ser Pro
            180                 185                 190
Ala Arg Leu Gly Ile Pro Gly Glu Ala Leu Pro Phe Ile His His Glu
            195                 200                 205
Leu Ser Ala Leu Glu Ala Ala Thr Arg Val Gly Ala Val Thr Pro Ala
    210                 215                 220
Ser Asp Pro Val Leu Ile Ile Gly Ala Gly Leu Ser Ala Ala Asp Ala
225                 230                 235                 240
Val Leu Tyr Ala Arg His Tyr Asn Ile Pro Val Ile His Ala Phe Arg
                245                 250                 255
Arg Ala Val Asp Asp Pro Gly Leu Val Phe Asn Gln Leu Pro Lys Met
                260                 265                 270
Leu Tyr Pro Glu Tyr His Lys Val His Gln Met Met Arg Glu Gln Ser
            275                 280                 285
Ile Leu Ser Pro Ser Pro Tyr Glu Gly Tyr Arg Ser Leu Pro Arg His
            290                 295                 300
Gln Leu Leu Cys Phe Lys Glu Asp Cys Gln Ala Val Phe Gln Asp Leu
305                 310                 315                 320
Glu Gly Val Glu Lys Val Phe Gly Val Ser Leu Val Leu Val Leu Ile
                325                 330                 335
Gly Ser His Pro Asp Leu Ser Phe Leu Pro Gly Ala Gly Ala Asp Phe
            340                 345                 350
Ala Val Asp Pro Asp Gln Pro Leu Ser Ala Lys Arg Asn Pro Ile Asp
```

```
            355                  360                  365
Val Asp Pro Phe Thr Tyr Gln Ser Thr Arg Gln Glu Gly Leu Tyr Ala
        370                  375                  380
Met Gly Pro Leu Ala Gly Asp Asn Phe Val Arg Phe Val Gln Gly Gly
385                  390                  395                  400
Ala Leu Ala Val Ala Ser Ser Leu Leu Arg Lys Glu Thr Arg Lys Pro
                405                  410                  415
Pro
```

```
<210> 4231
<211> 1588
<212> DNA
<213> Homo sapiens

<400> 4231
ncgactacag acacagacgg tgccgccgag acttgtgtct cagtacagtg tcagaagcaa
60
attaaagaac ttcgagatca aattgtatct gttcaggagg aaaagaagat tttagccatt
120
gagctggaaa atctcaagag caaactcgta gaagtaattg aagaagtaaa taaagttaaa
180
caagaaaaga ctgtttttaaa ttcagaagtt cttgaacaga gaaaagtctt agaaaaatgc
240
aatagagtgt ccatgttagc tgtagaagag tatgaggaga tgcaagtaaa cctggagctg
300
gagaaggacc ttcgaaagaa agcagagtca tttgcccaag agatgttcct tgagccaaac
360
cagggtaaaa agacaaagcc cccctttggg cggcagagtt ccatccttga tcagcagtta
420
gctttagacg aaaatgcaaa actcacccag caacttgaag aagagagaat tcagcatcaa
480
caaaaggtca agaattaga agagcaacta gaaaatgaaa cactccacaa agaaatacac
540
aacctcaaac agcaactgga gcttctagag aagataaaaa aggaattgga attgaaatat
600
cagaattctg aagagaaagc cagaaattta aagcactctg ttgatgaact ccagaaacga
660
gtgaaccagt ctgagaattc agtacctcca ccacctcctc ctccaccacc acttccccct
720
ccacctccca atcctatccg atccctcatg tccatgatcc ggaaacgatc ccaccccagt
780
ggcagtggtg ctaagaaaga aaaggcaact caaccagaaa caactgaaga agtcacagat
840
ctaaagaggc aagcagttga agagatgatg gatagaatta aaaagggagt tcatcttaga
900
cccgttaatc agacagccag accgaagaca aagccagaat cttcgaaagg ctgcgaaagt
960
gcagtggatg aactaaaagg aatactgggg acacttaaca aatccactag ttcaagaagc
1020
ttaaaatccc ttgaccctga aaacagtgaa actgagttag aaaggatttt gcgtcgcaga
1080
aaggtgacag cagaagcaga tagcagtagt ccaactggga tattagccac ctcagagtcc
1140
```

```
aaatccatgc cagtgttggg ttctgtatcc agtgtaacaa aaacagcctt gaacaagaaa
1200
actctggagg cagaattcaa cagcccgtcc cccccaacac ctgagccagg tgaagggccc
1260
cgtaaattgg aaggatgcac aagttccaag gttacgtttc agtaagtaac gatgctcttt
1320
actaagtggt gtatagaaga atctgtaatg actaacttgt gtgtttcttt gatttgtttc
1380
ctttagagag attttgattg gctcgccggt aaattctctt cttcttttca tttgatgggc
1440
cagctttttc attctaggct cctagataag agatctaatt aagatccaaa gcaagtacca
1500
tgtacaaaga gaattacttc ccctaaactg gtttggtaat caggttctta tacacaaata
1560
attgatctgg atgatacaga ctctgcag
1588
```

```
<210> 4232
<211> 434
<212> PRT
<213> Homo sapiens

<400> 4232
Xaa Thr Thr Asp Thr Asp Gly Ala Ala Glu Thr Cys Val Ser Val Gln
1               5                   10                  15
Cys Gln Lys Gln Ile Lys Glu Leu Arg Asp Gln Ile Val Ser Val Gln
            20                  25                  30
Glu Glu Lys Lys Ile Leu Ala Ile Glu Leu Glu Asn Leu Lys Ser Lys
        35                  40                  45
Leu Val Glu Val Ile Glu Glu Val Asn Lys Val Lys Gln Glu Lys Thr
    50                  55                  60
Val Leu Asn Ser Glu Val Leu Glu Gln Arg Lys Val Leu Glu Lys Cys
65                  70                  75                  80
Asn Arg Val Ser Met Leu Ala Val Glu Glu Tyr Glu Glu Met Gln Val
                85                  90                  95
Asn Leu Glu Leu Glu Lys Asp Leu Arg Lys Lys Ala Glu Ser Phe Ala
            100                 105                 110
Gln Glu Met Phe Leu Glu Pro Asn Gln Gly Lys Lys Thr Lys Pro Pro
        115                 120                 125
Phe Gly Arg Gln Ser Ser Ile Leu Asp Gln Gln Leu Ala Leu Asp Glu
    130                 135                 140
Asn Ala Lys Leu Thr Gln Gln Leu Glu Glu Glu Arg Ile Gln His Gln
145                 150                 155                 160
Gln Lys Val Lys Glu Leu Glu Glu Gln Leu Glu Asn Glu Thr Leu His
                165                 170                 175
Lys Glu Ile His Asn Leu Lys Gln Gln Leu Glu Leu Leu Glu Glu Asp
            180                 185                 190
Lys Lys Glu Leu Glu Leu Lys Tyr Gln Asn Ser Glu Glu Lys Ala Arg
        195                 200                 205
Asn Leu Lys His Ser Val Asp Glu Leu Gln Lys Arg Val Asn Gln Ser
    210                 215                 220
Glu Asn Ser Val Pro Pro Pro Pro Pro Pro Pro Pro Leu Pro Pro
225                 230                 235                 240
Pro Pro Pro Asn Pro Ile Arg Ser Leu Met Ser Met Ile Arg Lys Arg
```

3422

```
              245                  250                  255
Ser His Pro Ser Gly Ser Gly Ala Lys Lys Glu Lys Ala Thr Gln Pro
              260                  265                  270
Glu Thr Thr Glu Glu Val Thr Asp Leu Lys Arg Gln Ala Val Glu Glu
              275                  280                  285
Met Met Asp Arg Ile Lys Lys Gly Val His Leu Arg Pro Val Asn Gln
              290                  295                  300
Thr Ala Arg Pro Lys Thr Lys Pro Glu Ser Ser Lys Gly Cys Glu Ser
305                  310                  315                  320
Ala Val Asp Glu Leu Lys Gly Ile Leu Gly Thr Leu Asn Lys Ser Thr
              325                  330                  335
Ser Ser Arg Ser Leu Lys Ser Leu Asp Pro Glu Asn Ser Glu Thr Glu
              340                  345                  350
Leu Glu Arg Ile Leu Arg Arg Arg Lys Val Thr Ala Glu Ala Asp Ser
              355                  360                  365
Ser Ser Pro Thr Gly Ile Leu Ala Thr Ser Glu Ser Lys Ser Met Pro
              370                  375                  380
Val Leu Gly Ser Val Ser Ser Val Thr Lys Thr Ala Leu Asn Lys Lys
385                  390                  395                  400
Thr Leu Glu Ala Glu Phe Asn Ser Pro Ser Pro Thr Pro Glu Pro
              405                  410                  415
Gly Glu Gly Pro Arg Lys Leu Glu Gly Cys Thr Ser Ser Lys Val Thr
              420                  425                  430
Phe Gln
```

<210> 4233
<211> 2827
<212> DNA
<213> Homo sapiens

<400> 4233
```
ggatccctga aaggagacca tatactgtac catttgatac tcatttgggg cattatattt
60
atatcccatc aagacaagat tccaggaggg ggaatcactt gcaaggtcca cacaagtccg
120
cctatgtact ctctggatcg aatatttgct ggatttcgaa cacgaagtca gatgctgttg
180
ggtcacatag aagaacaaga taaggtcctc cactgccaat tttctgataa cagtgatgat
240
gaagaatcag aaggccaaga gaaatctgga actagatgta gaagtcgttc atggattcag
300
aagccagact ctgtttgttc ccttgttgaa ttgagtgata ctcaggatga aacacaaaag
360
tcagatttgg agaatgaaga tttaaagatt gattgtctcc aggagagtca agaattgaat
420
ttgcaaaaat taaagaattc agaacgcata cttactgaag ccaaacaaaa aatgagagaa
480
cttacagtta acatcaagat gaaggaagat ctgattaaag aattaataaa aacaggtaac
540
gatgccaagt ctgtaagcaa gcagtatact ttgaaagtaa caaagctaga gcatgatgca
600
gaacaggcaa aagtcgaact aactgaaaca caaaagcagc tacaggagct ggaaaacaaa
660
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gatctttctg atgttgcaat gaaggtaaaa ttacagaaag agtttcgtaa aaaggtggat
720
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780
tcactgtcaa tccaaaatga gaaacgtgct aatgaactag agcagagtgt agatcacatg
840
aaatatcaaa agatacagct acaaagaaaa ctacgagaag aaaatgaaaa aaggaagcaa
900
ctggatgcag taattaagcg ggaccagcaa aaaatcaaag taatacaatt aaaaacagga
960
caggaagaag gtctaaaacc gaaagctgag gaccttgatg catgtaactt gaaaaggaga
1020
aaaggttcgt ttggaagtat agaccatctc cagaaattgg atgagcaaaa gaaatggtta
1080
gatgaagaag tagagaaagt tctgaaccaa cgccaagaat tagaggagct ggaagcagac
1140
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1200
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1260
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1320
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1380
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1440
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1740
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1860
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1980
ggggaagcaa ttcggcggca actagcatca tcagagtatc aagaggctgg agatggagtc
2040
ctgaagccag aaggaggagg catgctttca gaagaattaa aatgggcatc cagacctgaa
2100
agtatgaaat taagtggaag agaaagagaa atggacagtt cagcaagcag cttaagaaca
2160
cagccaaatc ctcaaaagct ctgggaagat atcccagaat tacctccaat tcatagttct
2220
ttagcacccc ccagtgggca tatgttaggt aatgagaata aaacagaaac agatgataat
2280
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cagtttacaa aatctcacag tcgactgtca tcccaaattc aggttgtggg aaatgtggga
2340
cgacttcatg gtgtcacacc tgtaaaactg tgtcgaaaag aattacgtca aatttccgcc
2400
ttggaactat cattgcgacg ttccagtctt ggagttggca ttggatcaat ggctgctgat
2460
tccatcgaag tatctaggaa accaagggac ttaaaaactt agacattgaa taatagaact
2520
tttagtagat atgtaaaaag attccttttt ctaacctgtt aaaaactaaa gctcaagttc
2580
actacctctt tcctcagaat aaaggaagaa ggggaggaag gaatccctaa ttctttata
2640
tgctatagat gtgtacatct tctatatata tttggggagt tttagtttat attcccatag
2700
taatcaaaca tgttttccaa tacttgataa catttaaata tttataaata cgcttaaatg
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2820
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2827
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<210> 4234
<211> 833
<212> PRT
<213> Homo sapiens

<400> 4234

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Gly Ser Leu Lys Gly Asp His Ile Leu Tyr His Leu Ile Leu Ile Trp
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Gly Ile Ile Phe Ile Ser His Gln Asp Lys Ile Pro Gly Gly Gly Ile
            20                  25                  30
Thr Cys Lys Val His Thr Ser Pro Pro Met Tyr Ser Leu Asp Arg Ile
            35                  40                  45
Phe Ala Gly Phe Arg Thr Arg Ser Gln Met Leu Leu Gly His Ile Glu
        50                  55                  60
Glu Gln Asp Lys Val Leu His Cys Gln Phe Ser Asp Asn Ser Asp Asp
65                  70                  75                  80
Glu Glu Ser Glu Gly Gln Glu Lys Ser Gly Thr Arg Cys Arg Ser Arg
                85                  90                  95
Ser Trp Ile Gln Lys Pro Asp Ser Val Cys Ser Leu Val Glu Leu Ser
            100                 105                 110
Asp Thr Gln Asp Glu Thr Gln Lys Ser Asp Leu Glu Asn Glu Asp Leu
            115                 120                 125
Lys Ile Asp Cys Leu Gln Glu Ser Gln Glu Leu Asn Leu Gln Lys Leu
        130                 135                 140
Lys Asn Ser Glu Arg Ile Leu Thr Glu Ala Lys Gln Lys Met Arg Glu
145                 150                 155                 160
Leu Thr Val Asn Ile Lys Met Lys Glu Asp Leu Ile Lys Glu Leu Ile
                165                 170                 175
Lys Thr Gly Asn Asp Ala Lys Ser Val Ser Lys Gln Tyr Thr Leu Lys
            180                 185                 190
Val Thr Lys Leu Glu His Asp Ala Glu Gln Ala Lys Val Glu Leu Thr
            195                 200                 205
Glu Thr Gln Lys Gln Leu Gln Glu Leu Glu Asn Lys Asp Leu Ser Asp
```

```
          210                     215                     220
Val Ala Met Lys Val Lys Leu Gln Lys Glu Phe Arg Lys Lys Val Asp
225                     230                     235                     240
Ala Ala Lys Leu Arg Val Gln Val Leu Gln Lys Lys Gln Gln Asp Ser
              245                     250                     255
Lys Lys Leu Ala Ser Leu Ser Ile Gln Asn Glu Lys Arg Ala Asn Glu
              260                     265                     270
Leu Glu Gln Ser Val Asp His Met Lys Tyr Gln Lys Ile Gln Leu Gln
          275                     280                     285
Arg Lys Leu Arg Glu Glu Asn Glu Lys Arg Lys Gln Leu Asp Ala Val
          290                     295                     300
Ile Lys Arg Asp Gln Gln Lys Ile Lys Val Ile Gln Leu Lys Thr Gly
305                     310                     315                     320
Gln Glu Glu Gly Leu Lys Pro Lys Ala Glu Asp Leu Asp Ala Cys Asn
              325                     330                     335
Leu Lys Arg Arg Lys Gly Ser Phe Gly Ser Ile Asp His Leu Gln Lys
              340                     345                     350
Leu Asp Glu Gln Lys Lys Trp Leu Asp Glu Glu Val Glu Lys Val Leu
          355                     360                     365
Asn Gln Arg Gln Glu Leu Glu Glu Leu Glu Ala Asp Leu Lys Lys Arg
          370                     375                     380
Glu Ala Ile Val Ser Lys Lys Glu Ala Leu Leu Gln Glu Lys Ser His
385                     390                     395                     400
Leu Glu Asn Lys Lys Leu Arg Ser Ser Gln Ala Leu Asn Thr Asp Ser
              405                     410                     415
Leu Lys Ile Ser Thr Arg Leu Asn Leu Leu Glu Gln Glu Leu Ser Glu
              420                     425                     430
Lys Asn Val Gln Leu Gln Thr Ser Thr Ala Glu Glu Lys Thr Lys Ile
          435                     440                     445
Ser Glu Gln Val Glu Val Leu Gln Lys Glu Lys Asp Gln Leu Gln Lys
          450                     455                     460
Arg Arg His Asp Val Asp Glu Lys Leu Lys Asn Gly Arg Val Leu Ser
465                     470                     475                     480
Pro Glu Glu Glu His Val Leu Phe Gln Leu Glu Glu Gly Ile Glu Ala
              485                     490                     495
Leu Glu Ala Ala Ile Glu Tyr Arg Asn Glu Ser Ile Gln Asn Arg Gln
              500                     505                     510
Lys Ser Leu Arg Ala Ser Phe His Asn Leu Ser Arg Gly Glu Ala Asn
          515                     520                     525
Val Leu Glu Lys Leu Ala Cys Leu Ser Pro Val Glu Ile Arg Thr Ile
          530                     535                     540
Leu Phe Arg Tyr Phe Asn Lys Val Val Asn Leu Arg Glu Ala Glu Arg
545                     550                     555                     560
Lys Gln Gln Leu Tyr Asn Glu Glu Met Lys Met Lys Val Leu Glu Arg
              565                     570                     575
Asp Asn Met Val Arg Glu Leu Glu Ser Ala Leu Asp His Leu Lys Leu
              580                     585                     590
Gln Cys Asp Arg Arg Leu Thr Leu Gln Gln Lys Glu His Glu Gln Lys
          595                     600                     605
Met Gln Leu Leu Leu His His Phe Lys Glu Gln Asp Gly Glu Gly Ile
          610                     615                     620
Met Glu Thr Phe Lys Thr Tyr Glu Asp Lys Ile Gln Gln Leu Glu Lys
625                     630                     635                     640
Asp Leu Tyr Phe Tyr Lys Lys Thr Ser Arg Asp His Lys Lys Lys Leu
```

```
                        645                 650                 655
   Lys Glu Leu Val Gly Glu Ala Ile Arg Arg Gln Leu Ala Ser Ser Glu
                    660                 665                 670
   Tyr Gln Glu Ala Gly Asp Gly Val Leu Lys Pro Glu Gly Gly Gly Met
                675                 680                 685
   Leu Ser Glu Glu Leu Lys Trp Ala Ser Arg Pro Glu Ser Met Lys Leu
            690                 695                 700
   Ser Gly Arg Glu Arg Glu Met Asp Ser Ser Ala Ser Ser Leu Arg Thr
   705                 710                 715                 720
   Gln Pro Asn Pro Gln Lys Leu Trp Glu Asp Ile Pro Glu Leu Pro Pro
                    725                 730                 735
   Ile His Ser Ser Leu Ala Pro Pro Ser Gly His Met Leu Gly Asn Glu
                740                 745                 750
   Asn Lys Thr Glu Thr Asp Asp Asn Gln Phe Thr Lys Ser His Ser Arg
                755                 760                 765
   Leu Ser Ser Gln Ile Gln Val Val Gly Asn Val Gly Arg Leu His Gly
            770                 775                 780
   Val Thr Pro Val Lys Leu Cys Arg Lys Glu Leu Arg Gln Ile Ser Ala
   785                 790                 795                 800
   Leu Glu Leu Ser Leu Arg Arg Ser Ser Leu Gly Val Gly Ile Gly Ser
                    805                 810                 815
   Met Ala Ala Asp Ser Ile Glu Val Ser Arg Lys Pro Arg Asp Leu Lys
                820                 825                 830
   Thr
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<210> 4235
<211> 971
<212> DNA
<213> Homo sapiens

<400> 4235
ngacagcgag cgggggcgac ttgccaataa agttaggctc caacagctgc tgttgccacc
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accactagtt caagcaccat gcagtttacc tcaatatcaa attctttgac ctccactgct
120
gctattgggc tctcatttac aacttcaacg actaccaccg ccactttcac caccaacact
180
actaccacaa tcaccagtgg ctttactgtg aaccaaaacc aactgttatc aagagggttt
240
gaaaaccttg taccttatac ttcaactgtt agtgtagtag caactcctgt gatgacatat
300
ggtcatctgg agggtcttat aaatgagtgg aaccttgagc tggaagatca agagaagtac
360
tttcttctcc aggccactca ggtcaatgct tgggaccata cattgattga gaatggtgag
420
atgattcgta ttttacatgg agaagtgaac aaagtgaaac tggatcagaa aagattggaa
480
caagaattgg attttatcct gtcacagcag caggaactag aatttctgtt gacttattta
540
gaggagtcta cgcgtgacca gagtggactt cattatctgc aggatgcaga tgaggagcat
600
gtggagatct ccaccagatc tgcagaattc tgaatgccca tatggactcc ctgcagtgga
660
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ttgatcggaa ttcaggcatg ctgcgaagga aggtagaagt ggtaacacgg gttttcgagg
720
attatcgtca cgaggagcat gcacacaatg tcaacactgc tttttagtga atgaccatat
780
cttcagcatg tcgtttctgg attattacct acaaattctg atgttaaata gagtagtatt
840
tatacttaat atttcatctt gatcataatg aattgtgcat cctttttttc atttaagtat
900
tgtactgttg agaattatac cttagttttg tttttagtat tagaaaatca aaattatact
960
agcccctttg t
971

<210> 4236
<211> 198
<212> PRT
<213> Homo sapiens

<400> 4236
Ala Pro Thr Ala Ala Val Ala Thr Thr Thr Ser Ser Ser Thr Met Gln
1   5   10   15
Phe Thr Ser Ile Ser Asn Ser Leu Thr Ser Thr Ala Ala Ile Gly Leu
            20   25   30
Ser Phe Thr Thr Ser Thr Thr Thr Thr Ala Thr Phe Thr Thr Asn Thr
        35   40   45
Thr Thr Thr Ile Thr Ser Gly Phe Thr Val Asn Gln Asn Gln Leu Leu
    50   55   60
Ser Arg Gly Phe Glu Asn Leu Val Pro Tyr Thr Ser Thr Val Ser Val
65   70   75   80
Val Ala Thr Pro Val Met Thr Tyr Gly His Leu Glu Gly Leu Ile Asn
                85   90   95
Glu Trp Asn Leu Glu Leu Glu Asp Gln Glu Lys Tyr Phe Leu Leu Gln
            100   105   110
Ala Thr Gln Val Asn Ala Trp Asp His Thr Leu Ile Glu Asn Gly Glu
        115   120   125
Met Ile Arg Ile Leu His Gly Glu Val Asn Lys Val Lys Leu Asp Gln
    130   135   140
Lys Arg Leu Glu Gln Glu Leu Asp Phe Ile Leu Ser Gln Gln Gln Glu
145   150   155   160
Leu Glu Phe Leu Leu Thr Tyr Leu Glu Glu Ser Thr Arg Asp Gln Ser
                165   170   175
Gly Leu His Tyr Leu Gln Asp Ala Asp Glu Glu His Val Glu Ile Ser
            180   185   190
Thr Arg Ser Ala Glu Phe
        195

<210> 4237
<211> 560
<212> DNA
<213> Homo sapiens

<400> 4237
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60

tgatggtggc cacaccagcc ctgatgggag tgggcaccct gatgggctca ggcctccgaa
120
aattgtctcg ccagtgtcag gagcaggtac cggcattcct ggccatcctc ttcaccctcc
180
ccacaccgtt tctctttcca ctccccggaa ctcctccctg tccccatcct ggactccttg
240
tcctgttttt tggactcctt gtcctgtttc ctggactcct tgcagatcgc cagggcaatg
300
ggcgtagcag acgaggccct gggcaatgtg cggactgtgc gtgccttcgc catggagcaa
360
cgggaagagg agcgctatgg ggcagagctg gaagcctgcc gctgccgagc agaggagctg
420
ggccgcggca tcgccttgtt ccaagggctt tccaacatcg ccttcaactg tgagtgagcc
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aaggccctcc cttcacgcgt
560

<210> 4238
<211> 124
<212> PRT
<213> Homo sapiens

<400> 4238
Trp Ala Gln Ala Ser Glu Asn Cys Leu Ala Ser Val Arg Ser Arg Tyr
 1   5   10   15
Arg His Ser Trp Pro Ser Ser Ser Pro Ser Pro His Arg Phe Ser Phe
                20   25   30
His Ser Pro Glu Leu Leu Pro Val Pro Ile Leu Asp Ser Leu Ser Cys
            35   40   45
Phe Leu Asp Ser Leu Ser Cys Phe Leu Asp Ser Leu Gln Ile Ala Arg
        50   55   60
Ala Met Gly Val Ala Asp Glu Ala Leu Gly Asn Val Arg Thr Val Arg
65   70   75   80
Ala Phe Ala Met Glu Gln Arg Glu Glu Glu Arg Tyr Gly Ala Glu Leu
                85   90   95
Glu Ala Cys Arg Cys Arg Ala Glu Glu Leu Gly Arg Gly Ile Ala Leu
                100   105   110
Phe Gln Gly Leu Ser Asn Ile Ala Phe Asn Cys Glu
            115   120

<210> 4239
<211> 3127
<212> DNA
<213> Homo sapiens

<400> 4239
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gccactcgca agctggccaa gggcttcaca caatttgcca agatgacaga ggggaccaag
120
aagaccagca aaaagttcaa gttcttcaag ttcaagggct ttgggagtct ctccaacctc
180

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cctcggtcct tcactctgag acgatcctca gcttccatca gtaggcagtc ccatttggag
240
cctgacacct ttgaagccac gcaggatgac atggtgacgg tgcccaagag tcccccagcc
300
tatgcccgct ccagtgacat gtacagccac atgggcacca tgcctcgccc cagcatcaag
360
aaagcacaga actcacaggc tgcccggcag gcccaggagg cgggtcccaa gcccaacttg
420
gtacccggag gtgtacccga ccccccaggc ttggaggcag ccaaagaggt gatggtgaag
480
gccactggcc ctctagagga caccccagca atggaaccca acccttcagc agtggaggta
540
gaccccatca gaaagcctga ggtccccaca ggagacgtag aagaggagag acctcccagg
600
gacgtgcact cagaaagggc tgctggagag ccagaggctg gcagcgacta tgtgaagttc
660
tccaaggaga agtacatcct ggactcatcg ccagagaaac tccacaagga attggaggag
720
gagctcaaac tcagcagcac ggatctccgc agccatgcct ggtaccatgg ccgcatcccc
780
cgagaggtct cggagacctt ggtacaacgc aacggcgact tcctcatccg ggactcactc
840
accagcctgg gcgactatgt gctcacgtgc cgctggcgca accaggcctt gcacttcaag
900
atcaacaagg tggtggtgaa ggcaggcgag agctacacac acatccagta cctgtttgag
960
caggagagct ttgaccacgt gcccgccctc gtgcgctatc atgtgggcag ccgcaaggct
1020
gtgtcagagc agagtggtgc catcatctac tgcccggtga accgcacctt cccactgcgc
1080
tacctcgaag ccagctatgg cctgggacag gggagtagca agcctgctag ccccgtcagc
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ccctcaggcc caagggcag ccacatgaag cggcgcagcg tcaccatgac cgatgggctc
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1260
cgggactcca tccgcagctg tgccctcagc atggaccaga tcccagacct gcactcaccc
1320
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1380
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1440
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1500
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1560
tacagtgacc cggactctgg ccactactgc cagctccagc ctcccgtgcg tggcagccga
1620
gagtgggcag cgactgagac ctccagccag caggccagga gctatgggga gaggctaaag
1680
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1740
gtggaagtca cttcttcctt caacccggcc accttccagt cactactgat ccccagggat
1800
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aaccggccac tggaggtggg ccttctgcgc aaggtcaagg agctgctggc agaagtggat
1860
gcccggacgc tggcccggca tgtcaccaag gtggactgcc tggttgctag gatactgggc
1920
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1980
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2040
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2100
aagaccattc agctggcggc cgagctacgg gggactatgg gcaacatgtt cagcttcgcg
2160
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2220
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2280
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2340
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2400
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2460
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2580
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2640
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2700
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2760
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2820
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2880
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2940
tggggttccc tgttttcgag ccatgggagg caggctgctc acgcctcctc actctctgtc
3000
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3060
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3120
aaaaaaaa
3127

<210> 4240
<211> 860
<212> PRT
<213> Homo sapiens

<400> 4240
Met Thr Glu Gly Thr Lys Lys Thr Ser Lys Lys Phe Lys Phe Phe Lys

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1                   5                    10                   15
Phe Lys Gly Phe Gly Ser Leu Ser Asn Leu Pro Arg Ser Phe Thr Leu
            20                  25              Leu Glu Pro Asp
Arg Arg Ser Ser Ala Ser Ile Ser Arg Gln Ser His Leu Glu Pro Asp
            35                  40              45
Thr Phe Glu Ala Thr Gln Asp Asp Met Val Thr Val Pro Lys Ser Pro
    50                  55                  60
Pro Ala Tyr Ala Arg Ser Ser Asp Met Tyr Ser His Met Gly Thr Met
65                  70                  75                  80
Pro Arg Pro Ser Ile Lys Lys Ala Gln Asn Ser Gln Ala Ala Arg Gln
                85                  90                  95
Ala Gln Glu Ala Gly Pro Lys Pro Asn Leu Val Pro Gly Gly Val Pro
            100                 105             110
Asp Pro Pro Gly Leu Glu Ala Ala Lys Glu Val Met Val Lys Ala Thr
            115                 120             125
Gly Pro Leu Glu Asp Thr Pro Ala Met Glu Pro Asn Pro Ser Ala Val
    130                 135                 140
Glu Val Asp Pro Ile Arg Lys Pro Glu Val Pro Thr Gly Asp Val Glu
145                 150                 155                 160
Glu Glu Arg Pro Pro Arg Asp Val His Ser Glu Arg Ala Ala Gly Glu
                165             170                 175
Pro Glu Ala Gly Ser Asp Tyr Val Lys Phe Ser Lys Glu Lys Tyr Ile
            180             185                 190
Leu Asp Ser Ser Pro Glu Lys Leu His Lys Glu Leu Glu Glu Glu Leu
        195             200                 205
Lys Leu Ser Ser Thr Asp Leu Arg Ser His Ala Trp Tyr His Gly Arg
    210             215                 220
Ile Pro Arg Glu Val Ser Glu Thr Leu Val Gln Arg Asn Gly Asp Phe
225                 230                 235                 240
Leu Ile Arg Asp Ser Leu Thr Ser Leu Gly Asp Tyr Val Leu Thr Cys
                245                 250                 255
Arg Trp Arg Asn Gln Ala Leu His Phe Lys Ile Asn Lys Val Val Val
            260                 265                 270
Lys Ala Gly Glu Ser Tyr Thr His Ile Gln Tyr Leu Phe Glu Gln Glu
            275                 280                 285
Ser Phe Asp His Val Pro Ala Leu Val Arg Tyr His Val Gly Ser Arg
    290                 295                 300
Lys Ala Val Ser Glu Gln Ser Gly Ala Ile Ile Tyr Cys Pro Val Asn
305                 310                 315                 320
Arg Thr Phe Pro Leu Arg Tyr Leu Glu Ala Ser Tyr Gly Leu Gly Gln
            325                 330                 335
Gly Ser Ser Lys Pro Ala Ser Pro Val Ser Pro Ser Gly Pro Lys Gly
            340                 345             350
Ser His Met Lys Arg Arg Ser Val Thr Met Thr Asp Gly Leu Thr Ala
    355                 360                 365
Asp Lys Val Thr Arg Ser Asp Gly Cys Pro Thr Ser Thr Ser Leu Pro
    370                 375                 380
Arg Pro Arg Asp Ser Ile Arg Ser Cys Ala Leu Ser Met Asp Gln Ile
385                 390                 395                 400
Pro Asp Leu His Ser Pro Met Ser Pro Ile Ser Glu Ser Pro Ser Ser
                405                 410                 415
Pro Ala Tyr Ser Thr Val Thr Arg Val His Ala Ala Pro Ala Ala Pro
            420                 425             430
Ser Ala Thr Ala Leu Pro Ala Ser Pro Val Ala Arg Cys Ser Ser Glu
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3432

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            435                      440                      445
Pro Gln Leu Cys Pro Gly Ser Ala Pro Lys Thr His Gly Glu Ser Asp
    450                      455                      460
Lys Gly Pro His Thr Ser Pro Ser His Thr Leu Gly Lys Ala Ser Pro
465                      470                      475                      480
Ser Pro Ser Leu Ser Ser Tyr Ser Asp Pro Asp Ser Gly His Tyr Cys
                485                      490                      495
Gln Leu Gln Pro Pro Val Arg Gly Ser Arg Glu Trp Ala Ala Thr Glu
                500                      505                      510
Thr Ser Ser Gln Gln Ala Arg Ser Tyr Gly Glu Arg Leu Lys Glu Leu
                515                      520                      525
Ser Glu Asn Gly Ala Pro Glu Gly Asp Trp Gly Lys Thr Phe Thr Val
    530                      535                      540
Pro Ile Val Glu Val Thr Ser Ser Phe Asn Pro Ala Thr Phe Gln Ser
545                      550                      555                      560
Leu Leu Ile Pro Arg Asp Asn Arg Pro Leu Glu Val Gly Leu Leu Arg
                565                      570                      575
Lys Val Lys Glu Leu Leu Ala Glu Val Asp Ala Arg Thr Leu Ala Arg
                580                      585                      590
His Val Thr Lys Val Asp Cys Leu Val Ala Arg Ile Leu Gly Val Thr
                595                      600                      605
Lys Glu Met Gln Thr Leu Met Gly Val Arg Trp Gly Met Glu Leu Leu
    610                      615                      620
Thr Leu Pro His Gly Arg Gln Leu Arg Leu Asp Leu Leu Glu Arg Phe
625                      630                      635                      640
His Thr Met Ser Ile Met Leu Ala Val Asp Ile Leu Gly Cys Thr Gly
                645                      650                      655
Ser Ala Glu Glu Arg Ala Ala Leu Leu His Lys Thr Ile Gln Leu Ala
                660                      665                      670
Ala Glu Leu Arg Gly Thr Met Gly Asn Met Phe Ser Phe Ala Ala Val
                675                      680                      685
Met Gly Ala Leu Asp Met Ala Gln Ile Ser Arg Leu Glu Gln Thr Trp
    690                      695                      700
Val Thr Leu Arg Gln Arg His Thr Glu Gly Ala Ile Leu Tyr Glu Lys
705                      710                      715                      720
Lys Leu Lys Pro Phe Leu Lys Ser Leu Asn Glu Gly Lys Glu Gly Pro
                725                      730                      735
Pro Leu Ser Asn Thr Thr Phe Pro His Val Leu Pro Leu Ile Thr Leu
                740                      745                      750
Leu Glu Cys Asp Ser Ala Pro Pro Glu Gly Pro Glu Pro Trp Gly Ser
                755                      760                      765
Thr Glu His Gly Val Glu Val Val Leu Ala His Leu Glu Ala Ala Arg
    770                      775                      780
Thr Val Ala His His Gly Gly Leu Tyr His Thr Asn Ala Glu Val Lys
785                      790                      795                      800
Leu Gln Gly Phe Gln Ala Arg Pro Glu Leu Leu Glu Val Phe Ser Thr
                805                      810                      815
Glu Phe Gln Met Arg Leu Leu Trp Gly Ser Gln Gly Ala Ser Ser Ser
                820                      825                      830
Gln Ala Arg Arg Tyr Glu Lys Phe Asp Lys Val Leu Thr Ala Leu Ser
                835                      840                      845
His Lys Leu Glu Pro Ala Val Arg Ser Ser Glu Leu
    850                      855                      860
```

<210> 4241
<211> 479
<212> DNA
<213> Homo sapiens

<400> 4241
nacgcgtttt ctgaaaggag cttcctggca ctcaccagcc gcttcctgtt tggactcctg
60
aacgaggaga ccaggagcca cctggagaag agtctctgct ggaaggtctc gccgcacatc
120
aagatggacc tgttgcagtg gatccaaagc aaaactcaga gcgacggctc caccctgcag
180
cagggctcct tggagttctt cagctgcttg tacgagatcc aggaggagga gtttatccag
240
caggccctga gccacttcca ggtgatcgtg gtcagcaaca ttgcctccaa gatggagcac
300
atggtctcct cgttctgtct gaagcgctgc aggagcgccc aggtgctgca cttgtatggc
360
gccacctaca gcgcggacgg ggaagaccgc gcgaggtgtc cgcaggagcg cacacgctgt
420
tggtgcagct accagagagg cccgttctgc tggacgccta cagtgaacat ctggcagcg.   ..
479

<210> 4242
<211> 159
<212> PRT
<213> Homo sapiens

<400> 4242
Xaa Ala Phe Ser Glu Arg Ser Phe Leu Ala Leu Thr Ser Arg Phe Leu
1   5   10   15
Phe Gly Leu Leu Asn Glu Glu Thr Arg Ser His Leu Glu Lys Ser Leu
            20   25   30
Cys Trp Lys Val Ser Pro His Ile Lys Met Asp Leu Leu Gln Trp Ile
            35   40   45
Gln Ser Lys Thr Gln Ser Asp Gly Ser Thr Leu Gln Gln Gly Ser Leu
        50   55   60
Glu Phe Phe Ser Cys Leu Tyr Glu Ile Gln Glu Glu Glu Phe Ile Gln
65   70   75   80
Gln Ala Leu Ser His Phe Gln Val Ile Val Val Ser Asn Ile Ala Ser
                85   90   95
Lys Met Glu His Met Val Ser Ser Phe Cys Leu Lys Arg Cys Arg Ser
            100   105   110
Ala Gln Val Leu His Leu Tyr Gly Ala Thr Tyr Ser Ala Asp Gly Glu
            115   120   125
Asp Arg Ala Arg Cys Pro Gln Glu Arg Thr Arg Cys Trp Cys Ser Tyr
        130   135   140
Gln Arg Gly Pro Phe Cys Trp Thr Pro Thr Val Asn Ile Trp Gln
145   150   155

<210> 4243
<211> 3159
<212> DNA
<213> Homo sapiens

```
<400> 4243
ngccgcaacc cgtcccggag gtgtcctgtc tcctgtcgcc gccgccgccg ccaccaccgc
60
tgccactgcc gccctgccgg ggccatgttc gctctgggct tgcccttctt ggtgctcttg
120
gtggcctcgg tcgagagcca tctggggggtt ctggggccca agaacgtctc gcagaaagac
180
gccgagtttg agcgcaccta cgtggacgag gtcaacagcg agctggtcaa catctacacc
240
ttcaaccata ctgtgacccg caacaggaca gagggcgtgc gtgtgtctgt gaacgtcctg
300
aacaagcaga agggggcgcc gttgctgttt gtggtccgcc agaaggaggc tgtggtgtcc
360
ttccaggtgc ccctaatcct gcgagggatg tttcagcgca agtacctcta ccaaaaagtg
420
gaacgaaccc tgtgtcagcc ccccaccaag aatgagtcgg agattcagtt cttctacgtg
480
gatgtgtcca ccctgtcacc agtcaacacc acataccagc tccgggtcag ccgcatggac
540
gattttgtgc tcaggactgg ggagcagttc agcttcaata ccacagcagc acagccccag
600
tacttcaagt atgagttccc tgaaggcgtg gactcggtaa ttgtcaaggt gacctccaac
660
aaggccttcc cctgctcagt catctccatt caggatgtgc tgtgtcctgt .ctatgacctg
720
gacaacaacg tagccttcat cggcatgtac cagacgatga ccaagaaggc ggccatcacc
780
gtacagcgca aagacttccc cagcaacagc ttttatgtgg tggtggtggt gaagaccgaa
840
gaccaagcct gcggggggctc cctgccttttc tacccccttcg cagaagatga accggtcgat
900
caagggcacc gccagaaaac cctgtcagtg ctggtgtctc aagcagtcac gtctgaggca
960
tacgtcagtg ggatgctctt ttgcctgggt atatttctct cctttttacct gctgaccgtc
1020
ctcctggcct gctgggagaa ctggaggcag aagaagaaga ccctgctggt ggccattgac
1080
cgagcctgcc cagaaagcgc ttctctcctt ggtcaccctc gagtcctggc tgattctttt
1140
cctggcagtt cccccttatga gggttacaac tatggctcct ttgagaatgt ttctggatct
1200
accgatggtc tggttgacag cgctggcact ggggacctct cttacggtta ccaggggcac
1260
gaccagttca agcggcgcct ccccctctggc cagatgcggc agctgtgcat tgccatgggc
1320
cgctcctttg aacctgtagg tactcggccc cgagtggact ccatgagctc tgtggaggag
1380
gatgactacg acacattgac cgacatcgat tccgacaaga atgtcattcg caccaagcaa
1440
tacctctatg tggctgacct ggcacggaag acaagcgtg ttctgcggaa aaagtaccag
1500
atctacttct ggaacattgc caccattgct gtcttctatg cccttcctgt ggtgcagctg
1560
```

3435

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gtgatcacct accagacggt ggtgaatgtc acagggaatc aggacatctg ctactacaac
1620
ttcctctgcg cccacccact gggcaatctc agcgccttca acaacatcct cagcaacctg
1680
gggtacatcc tgctggggct gctttttcctg ctcatcatcc tgcaacggga gatcaaccac
1740
aaccgggccc tgctgcgcaa tgacctctgt gccctggaat gtgggatccc caaacacttt
1800
gggctttttct acgccatggg cacagccctg atgatggagg ggctgctcag tgcttgctat
1860
catgtgtgcc ccaactatac caatttccag tttgacacat cgttcatgta catgatcgcc
1920
ggactctgca tgctgaagct ctaccagaag cggcacccgg acatcaacgc cagcgcctac
1980
agtgcctacg cctgcctggc cattgtcatc ttcttctctg tgctgggcgt ggtctttggc
2040
aaagggaaca cggcgttctg gatcgtcttc tccatcattc acatcatcgc caccctgctc
2100
ctcagcacgc agctctatta catgggccgg tggaaactgg actcggggat cttccgccgc
2160
atcctccacg tgctctacac agactgcatc cggcagtgca gcgggccgct ctacgtggac
2220
cgcatggtgc tgctggtcat gggcaacgtc atcaactggt cgctggctgc ctatgggctt
2280
atcatgcgcc ccaatgattt cgcttcctac ttgttggcca ttggcatctg caacctgctc
2340
ctttacttcg ccttctacat catcatgaag ctccggagtg gggagaggat caagctcatc
2400
cccctgctct gcatcgtttg cacctccgtg gtctgggggct cgcgctctt cttcttcttc
2460
cagggactca gcacctggca gaaaaccccct gcagagtcga gggagcacaa ccgggactgc
2520
atcctcctcg acttctttga cgaccacgac atctggcact cctctcctc catcgccatg
2580
ttcgggtcct tcctggtaag cgggcctccc ggcgcagcgt tgaggataac gtgaaaggta
2640
gcagctgcct ccttctctgt gagctgatct ggcgtccaca ccccaggtgt tagctgacac
2700
tggatgacga cctggatact tagaaagggg cttcaggaag ggatgtgctg tttccctcta
2760
cgtgcccagt cctagcctcg ctctaggacc cagggctggc ttctaagttt ccgtccagtc
2820
ttcaggcaag ttctgtgtta gtcatgcaca cacatacctca tgaaaccttg aagtttacaa
2880
agaattgccc cagctctggg caccctggcc accctggtcc ttggatcccc ttcgtcccac
2940
ctggtccacc ccagatgctg aggatggggg agctcaggcg gggcctctgc tttggggatg
3000
ggaatgtgtt tttctcccaa acttgttttt atagctctgc ttgaagggct gggagatgag
3060
gtgggtctgg atcttttctc agagcgtctc catgctatgg ttgcatttcc gttttctatg
3120
aatgaatttg catacaataa ccaaccagac tcagtaaaa
3159
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```
<210> 4244
<211> 849
<212> PRT
<213> Homo sapiens

<400> 4244
Met Phe Ala Leu Gly Leu Pro Phe Leu Val Leu Leu Val Ala Ser Val
1               5                   10                  15
Glu Ser His Leu Gly Val Leu Gly Pro Lys Asn Val Ser Gln Lys Asp
            20                  25                  30
Ala Glu Phe Glu Arg Thr Tyr Val Asp Glu Val Asn Ser Glu Leu Val
        35                  40                  45
Asn Ile Tyr Thr Phe Asn His Thr Val Thr Arg Asn Arg Thr Glu Gly
    50                  55                  60
Val Arg Val Ser Val Asn Val Leu Asn Lys Gln Lys Gly Ala Pro Leu
65                  70                  75                  80
Leu Phe Val Val Arg Gln Lys Glu Ala Val Val Ser Phe Gln Val Pro
                85                  90                  95
Leu Ile Leu Arg Gly Met Phe Gln Arg Lys Tyr Leu Tyr Gln Lys Val
            100                 105                 110
Glu Arg Thr Leu Cys Gln Pro Pro Thr Lys Asn Glu Ser Glu Ile Gln
        115                 120                 125
Phe Phe Tyr Val Asp Val Ser Thr Leu Ser Pro Val Asn Thr Thr Tyr
    130                 135                 140
Gln Leu Arg Val Ser Arg Met Asp Asp Phe Val Leu Arg Thr Gly Glu
145                 150                 155                 160
Gln Phe Ser Phe Asn Thr Thr Ala Ala Gln Pro Gln Tyr Phe Lys Tyr
                165                 170                 175
Glu Phe Pro Glu Gly Val Asp Ser Val Ile Val Lys Val Thr Ser Asn
            180                 185                 190
Lys Ala Phe Pro Cys Ser Val Ile Ser Ile Gln Asp Val Leu Cys Pro
        195                 200                 205
Val Tyr Asp Leu Asp Asn Asn Val Ala Phe Ile Gly Met Tyr Gln Thr
    210                 215                 220
Met Thr Lys Lys Ala Ala Ile Thr Val Gln Arg Lys Asp Phe Pro Ser
225                 230                 235                 240
Asn Ser Phe Tyr Val Val Val Val Lys Thr Glu Asp Gln Ala Cys
                245                 250                 255
Gly Gly Ser Leu Pro Phe Tyr Pro Phe Ala Glu Asp Glu Pro Val Asp
            260                 265                 270
Gln Gly His Arg Gln Lys Thr Leu Ser Val Leu Val Ser Gln Ala Val
        275                 280                 285
Thr Ser Glu Ala Tyr Val Ser Gly Met Leu Phe Cys Leu Gly Ile Phe
    290                 295                 300
Leu Ser Phe Tyr Leu Leu Thr Val Leu Leu Ala Cys Trp Glu Asn Trp
305                 310                 315                 320
Arg Gln Lys Lys Lys Thr Leu Leu Val Ala Ile Asp Arg Ala Cys Pro
                325                 330                 335
Glu Ser Ala Ser Leu Leu Gly His Pro Arg Val Leu Ala Asp Ser Phe
            340                 345                 350
Pro Gly Ser Ser Pro Tyr Glu Gly Tyr Asn Tyr Gly Ser Phe Glu Asn
        355                 360                 365
Val Ser Gly Ser Thr Asp Gly Leu Val Asp Ser Ala Gly Thr Gly Asp
```

```
          370                     375                     380
Leu Ser Tyr Gly Tyr Gln Gly His Asp Gln Phe Lys Arg Arg Leu Pro
385                     390                     395                     400
Ser Gly Gln Met Arg Gln Leu Cys Ile Ala Met Gly Arg Ser Phe Glu
              405                     410                     415
Pro Val Gly Thr Arg Pro Arg Val Asp Ser Met Ser Ser Val Glu Glu
              420                     425                     430
Asp Asp Tyr Asp Thr Leu Thr Asp Ile Asp Ser Asp Lys Asn Val Ile
              435                     440                     445
Arg Thr Lys Gln Tyr Leu Tyr Val Ala Asp Leu Ala Arg Lys Asp Lys
      450                     455                     460
Arg Val Leu Arg Lys Lys Tyr Gln Ile Tyr Phe Trp Asn Ile Ala Thr
465                     470                     475                     480
Ile Ala Val Phe Tyr Ala Leu Pro Val Val Gln Leu Val Ile Thr Tyr
              485                     490                     495
Gln Thr Val Val Asn Val Thr Gly Asn Gln Asp Ile Cys Tyr Tyr Asn
              500                     505                     510
Phe Leu Cys Ala His Pro Leu Gly Asn Leu Ser Ala Phe Asn Asn Ile
      515                     520                     525
Leu Ser Asn Leu Gly Tyr Ile Leu Leu Gly Leu Leu Phe Leu Leu Ile
      530                     535                     540
Ile Leu Gln Arg Glu Ile Asn His Asn Arg Ala Leu Leu Arg Asn Asp
545                     550                     555                     560
Leu Cys Ala Leu Glu Cys Gly Ile Pro Lys His Phe Gly Leu Phe Tyr
              565                     570                     575
Ala Met Gly Thr Ala Leu Met Met Glu Gly Leu Leu Ser Ala Cys Tyr
              580                     585                     590
His Val Cys Pro Asn Tyr Thr Asn Phe Gln Phe Asp Thr Ser Phe Met
      595                     600                     605
Tyr Met Ile Ala Gly Leu Cys Met Leu Lys Leu Tyr Gln Lys Arg His
      610                     615                     620
Pro Asp Ile Asn Ala Ser Ala Tyr Ser Ala Tyr Ala Cys Leu Ala Ile
625                     630                     635                     640
Val Ile Phe Phe Ser Val Leu Gly Val Val Phe Gly Lys Gly Asn Thr
              645                     650                     655
Ala Phe Trp Ile Val Phe Ser Ile Ile His Ile Ile Ala Thr Leu Leu
              660                     665                     670
Leu Ser Thr Gln Leu Tyr Tyr Met Gly Arg Trp Lys Leu Asp Ser Gly
      675                     680                     685
Ile Phe Arg Arg Ile Leu His Val Leu Tyr Thr Asp Cys Ile Arg Gln
      690                     695                     700
Cys Ser Gly Pro Leu Tyr Val Asp Arg Met Val Leu Leu Val Met Gly
705                     710                     715                     720
Asn Val Ile Asn Trp Ser Leu Ala Ala Tyr Gly Leu Ile Met Arg Pro
              725                     730                     735
Asn Asp Phe Ala Ser Tyr Leu Leu Ala Ile Gly Ile Cys Asn Leu Leu
              740                     745                     750
Leu Tyr Phe Ala Phe Tyr Ile Ile Met Lys Leu Arg Ser Gly Glu Arg
      755                     760                     765
Ile Lys Leu Ile Pro Leu Leu Cys Ile Val Cys Thr Ser Val Val Trp
      770                     775                     780
Gly Phe Ala Leu Phe Phe Phe Phe Gln Gly Leu Ser Thr Trp Gln Lys
785                     790                     795                     800
Thr Pro Ala Glu Ser Arg Glu His Asn Arg Asp Cys Ile Leu Leu Asp
```

```
                        805                    810                    815
     Phe Phe Asp Asp His Asp Ile Trp His Phe Leu Ser Ser Ile Ala Met
                        820                    825                    830
     Phe Gly Ser Phe Leu Val Ser Gly Pro Pro Gly Ala Ala Leu Arg Ile
                835                    840                    845
     Thr
```

```
<210> 4245
<211> 909
<212> DNA
<213> Homo sapiens

<400> 4245
ngggcccaga gcctccaaga ggctgcacac caggagctca acaccctcaa gttccagctg
60
agtgctgaaa tcatggacta ccagagcaga cttaagaatg ctggtgaaga gtgcaagagc
120
ctcaggggcc agcttgagga gcaaggccgg cagctgcagg ctgctgagga agctgtggag
180
aagctgaagg ccacccaagc agacatggga gagaagctga gctgcactag caaccatctt
240
gcagagtgcc aggcggccat gctgaggaag gacaaggagg gggctgccct gcgtgaagac
300
ctagaaagga cccagaagga actcgaaaaa gccacaacaa aaatccaaga gtattacaac
360
aaactctgcc aggaggtgac aaatcgtgag aggaatgacc agaagatgct tgctgacctg
420
gatgacctca acagaaccaa gaagtatctc gaggagcggc tgatagagct gctcagggac
480
aaggatgctc tctggcagaa gtcagatgcc ctggaattcc agcagaagct cagtgctgag
540
gagagatggc tcggagacac agaggcaaac cactgcctcg actgtaagcg ggagttcagc
600
tggatggtgc ggcggcacca ctgcaggata tgtggccgca tcttctgtta ctactgctgc
660
aacaactacg tcctgagcaa gcacggtggc aaaaaggagc gctgctgccg agcctgtttc
720
cagaagctca gtgaaggccc tggctcccct gatagcagtg gctcaggcac tagccaggga
780
gagctcagcc ctgcactgtc accagcctca cctgggcccc aggccacagg aggccaagga
840
gcaaatacag actacaggcc accggacgac gctgtgtttg atatcatcac agatgaggaa
900
ttgtgccag
909
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```
<210> 4246
<211> 303
<212> PRT
<213> Homo sapiens

<400> 4246
Xaa Ala Gln Ser Leu Gln Glu Ala Ala His Gln Glu Leu Asn Thr Leu
```

```
 1                  5                     10                    15
Lys Phe Gln Leu Ser Ala Glu Ile Met Asp Tyr Gln Ser Arg Leu Lys
               20                    25                    30
Asn Ala Gly Glu Glu Cys Lys Ser Leu Arg Gly Gln Leu Glu Glu Gln
               35                    40                    45
Gly Arg Gln Leu Gln Ala Ala Glu Glu Ala Val Glu Lys Leu Lys Ala
               50                    55                    60
Thr Gln Ala Asp Met Gly Glu Lys Leu Ser Cys Thr Ser Asn His Leu
65                    70                    75                    80
Ala Glu Cys Gln Ala Ala Met Leu Arg Lys Asp Lys Glu Gly Ala Ala
                     85                    90                    95
Leu Arg Glu Asp Leu Glu Arg Thr Gln Lys Glu Leu Glu Lys Ala Thr
                    100                   105                   110
Thr Lys Ile Gln Glu Tyr Tyr Asn Lys Leu Cys Gln Glu Val Thr Asn
                    115                   120                   125
Arg Glu Arg Asn Asp Gln Lys Met Leu Ala Asp Leu Asp Asp Leu Asn
                    130                   135                   140
Arg Thr Lys Lys Tyr Leu Glu Glu Arg Leu Ile Glu Leu Leu Arg Asp
145                   150                   155                   160
Lys Asp Ala Leu Trp Gln Lys Ser Asp Ala Leu Glu Phe Gln Gln Lys
                    165                   170                   175
Leu Ser Ala Glu Glu Arg Trp Leu Gly Asp Thr Glu Ala Asn His Cys
                    180                   185                   190
Leu Asp Cys Lys Arg Glu Phe Ser Trp Met Val Arg Arg His His Cys
                    195                   200                   205
Arg Ile Cys Gly Arg Ile Phe Cys Tyr Tyr Cys Cys Asn Asn Tyr Val
                    210                   215                   220
Leu Ser Lys His Gly Gly Lys Lys Glu Arg Cys Cys Arg Ala Cys Phe
225                   230                   235                   240
Gln Lys Leu Ser Glu Gly Pro Gly Ser Pro Asp Ser Ser Gly Ser Gly
                    245                   250                   255
Thr Ser Gln Gly Glu Leu Ser Pro Ala Leu Ser Pro Ala Ser Pro Gly
                    260                   265                   270
Pro Gln Ala Thr Gly Gly Gln Gly Ala Asn Thr Asp Tyr Arg Pro Pro
                    275                   280                   285
Asp Asp Ala Val Phe Asp Ile Ile Thr Asp Glu Glu Leu Cys Gln
               290                   295                   300
```

```
<210> 4247
<211> 5755
<212> DNA
<213> Homo sapiens

<400> 4247
caccctctgg acaagagaac gggcgagcgg gagctaggag ggaagagtgg agaggaccgg
60
cgaggcgcgc cagccggagc cacctccttc ccggccgccc cctccccact ccccctacac
120
acacacgctc gctcgctcgc cggcgcgcgc acacccccccg cgccggaccc gcacctcggc
180
gggcgccaca cactcggcag cccgagccgc ggtagccgca gcgggatgga ggcggcgcgc
240
acggagcgcc ccgcaggcag gccggggggcg ccgcttgtcc ggacggggct cctactcttg
300
```

```
tcgacgtggg tcctggccgg cgccgagatc acttgggacg cgacaggcgg tcccggacgc
360
ccggcggccc cggcttcgcg gccaccggcg ttgtctccac tctcgccgcg ggcagtggcc
420
agccagtggc cggaggagct ggcgtcggcg cggagagccg ccgtgctggg cgccgggcc
480
ggaccagagc tgctgcccca gcagggcggc ggcagaggcg gtgagatgca ggtggaagcc
540
ggagggacat caccggcagg cgagcggcgg ggccggggca tcccagctcc tgccaagctt
600
ggcggcgcga ggaggagtcg ccgggcgcag cccccaatca cccaggaacg cggggacgcc
660
tgggccactg ctccggccga tggttccaga ggaagccgtc cccttgctaa gggttcccgg
720
gaggaggtga aggcgccgcg ggctggggGG tcggcggctg aagacctccg gctgcccagc
780
acctccttcg cgctgaccgg ggactcggcc cacaaccaag ccatggtgca ctggtcggga
840
cacaacagca gcgtcatact tatcctgacg aagctgtatg acttcaacct gggcagcgtg
900
actgagagtt cactatggag gtcgacagat tatggcacca cctatgaaaa gctgaatgac
960
aaagtgggtt tgaagactgt cctcagttac ctctatgtca atccaaccaa caaaaggaag
1020
attatgcttc tcagtgatcc tgagatggag agcagcatat tgatcagctc agacgaaggg
1080
gcgacctatc agaagtatcg gctcaccttc tatatccaga gcctgctctt tcatcccaag
1140
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1200
ggaagacggt ggcaactcat gcatgaacgc atcacaccca acaggtttta ttggtcggtg
1260
gccggattgg ataaggaggc ggacctggtg cacatggagg tgcggaccac ggatggatat
1320
gctcactacc tcacctgcag gatccaggaa tgtgccgaga caactagaag tgggcctttt
1380
gcccgctcca ttgacatcag ttccctggtt gtccaggatg aatatatctt cattcaggta
1440
acaactagtg gaagagccag ctactacgtg tcttatcgaa gagaggcctt tgctcagata
1500
aagctgccta agtactcgtt gccaaaggac atgcacatca tcagtacaga cgagaaccaa
1560
gtatttgctg cggtccaaga atggaaccag aatgacacgt acaacctcta catctcagac
1620
acgcgtggga tttacttcac tctggccatg gagaacatca gagcagcag aggtctaatg
1680
gggaacatca ttattgaatt gtatgaggta gcaggtatca aagggatatt tctggcaaac
1740
aagaaggtgg acgaccaggt gaagacatac atcacttaca caaaggcag ggattggcgc
1800
ctgctgcaag ctccggatgt ggacctgaga ggaagcccag tgcactgcct gctgcccttc
1860
tgttccttac atctgcacct gcaactctct gaaaatccat attcctcagg aagaatctct
1920
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agcaaggaga cagccccagg acttgtggtg gctacaggca acattggccc ggagctctca
1980
tatactgata ttggtgtgtt catctcctcc gatgggggca acacatggag acagatcttt
2040
gatgaagagt acaatgtctg gttcctagac tggggtggtg ccctcgtggc catgaaacac
2100
acacctctgc cagtcaggca tttgtgggtg agttttgatg agggccactc ttgggacaag
2160
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2220
acccacatca tgacagtttt tggccacttc agcctccgct ccgaatggca attggtgaaa
2280
gtggactaca aatctatctt cagccggcat tgcaccaagg aggactatca gacctggcac
2340
ctgctcaatc agggagagcc ttgtgtcatg ggagaaagga aaatattcaa gaaacgtaag
2400
ccaggagctc agtgtgccct gggccgagac cactcaggat cagtggtctc agaaccctgt
2460
gtctgtgcca attgggactt cgagtgtgac tatgggtatg agagacatgg ggagagccag
2520
tgtgtcccag ctttctggta caatccagca tccccatcaa aggactgcag ccttggtcaa
2580
agctacctta acagcactgg gtatcggcgg attgtgtcca caactgcac agatgggcta
2640
agggagaagt acaccgccaa ggcccagatg tgccctggaa aagcccctcg gggcctccat
2700
gtggtgacga ccgatgggcg gctggtggca gagcaggggc acaatgcaac tttcatcatc
2760
ctcatggagg agggtgatct acaaaggaca aacatccagc ttgactttgg ggatgggatt
2820
gctgtgtcct acgcaaactt cagccccatc gaggacggca tcaagcacgt gtataagagt
2880
gcggggatct tccaggtgac agcctatgca gagaacaacc ttggctcaga cacagctgtc
2940
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3000
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5160

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5640
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<210> 4248
<211> 1297
<212> PRT
<213> Homo sapiens

<400> 4248
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His Pro Leu Asp Lys Arg Thr Gly Glu Arg Glu Leu Gly Gly Lys Ser
1               5                   10                  15
Gly Glu Asp Arg Arg Gly Ala Pro Ala Gly Ala Thr Ser Phe Pro Ala
            20                  25                  30
Ala Pro Ser Pro Leu Pro Leu His Thr His Ala Arg Ser Leu Ala Gly
        35                  40                  45
Ala Arg Thr Pro Pro Ala Pro Asp Pro His Leu Gly Gly Arg His Thr
    50                  55                  60
Leu Gly Ser Pro Ser Arg Gly Ser Arg Ser Gly Met Glu Ala Ala Arg
65                  70                  75                  80
Thr Glu Arg Pro Ala Gly Arg Pro Gly Ala Pro Leu Val Arg Thr Gly
                85                  90                  95
Leu Leu Leu Leu Ser Thr Trp Val Leu Ala Gly Ala Glu Ile Thr Trp
                100                 105                 110
Asp Ala Thr Gly Gly Pro Gly Arg Pro Ala Ala Pro Ala Ser Arg Pro
            115                 120                 125
Pro Ala Leu Ser Pro Leu Ser Pro Arg Ala Val Ala Ser Gln Trp Pro
        130                 135                 140
Glu Glu Leu Ala Ser Ala Arg Arg Ala Ala Val Leu Gly Arg Arg Ala
145                 150                 155                 160
Gly Pro Glu Leu Leu Pro Gln Gln Gly Gly Gly Arg Gly Gly Glu Met
                165                 170                 175
Gln Val Glu Ala Gly Gly Thr Ser Pro Ala Gly Glu Arg Arg Gly Arg
            180                 185                 190
Gly Ile Pro Ala Pro Ala Lys Leu Gly Gly Ala Arg Arg Ser Arg Arg
        195                 200                 205
Ala Gln Pro Pro Ile Thr Gln Glu Arg Gly Asp Ala Trp Ala Thr Ala
```

```
          210                      215                      220
Pro Ala Asp Gly Ser Arg Gly Ser Arg Pro Leu Ala Lys Gly Ser Arg
225                      230                      235                      240
Glu Glu Val Lys Ala Pro Arg Ala Gly Gly Ser Ala Ala Glu Asp Leu
              245                      250                      255
Arg Leu Pro Ser Thr Ser Phe Ala Leu Thr Gly Asp Ser Ala His Asn
              260                      265                      270
Gln Ala Met Val His Trp Ser Gly His Asn Ser Ser Val Ile Leu Ile
          275                      280                      285
Leu Thr Lys Leu Tyr Asp Phe Asn Leu Gly Ser Val Thr Glu Ser Ser
          290                      295                      300
Leu Trp Arg Ser Thr Asp Tyr Gly Thr Thr Tyr Glu Lys Leu Asn Asp
305                      310                      315                      320
Lys Val Gly Leu Lys Thr Val Leu Ser Tyr Leu Tyr Val Asn Pro Thr
              325                      330                      335
Asn Lys Arg Lys Ile Met Leu Leu Ser Asp Pro Glu Met Glu Ser Ser
              340                      345                      350
Ile Leu Ile Ser Ser Asp Glu Gly Ala Thr Tyr Gln Lys Tyr Arg Leu
          355                      360                      365
Thr Phe Tyr Ile Gln Ser Leu Leu Phe His Pro Lys Gln Glu Asp Trp
          370                      375                      380
Val Leu Ala Tyr Ser Leu Asp Gln Lys Leu Tyr Ser Ser Met Asp Phe
385                      390                      395                      400
Gly Arg Arg Trp Gln Leu Met His Glu Arg Ile Thr Pro Asn Arg Phe
              405                      410                     —415·
Tyr Trp Ser Val Ala Gly Leu Asp Lys Glu Ala Asp Leu Val His Met
              420                      425                      430
Glu Val Arg Thr Thr Asp Gly Tyr Ala His Tyr Leu Thr Cys Arg Ile
              435                      440                      445
Gln Glu Cys Ala Glu Thr Thr Arg Ser Gly Pro Phe Ala Arg Ser Ile
          450                      455                      460
Asp Ile Ser Ser Leu Val Val Gln Asp Glu Tyr Ile Phe Ile Gln Val
465                      470                      475                      480
Thr Thr Ser Gly Arg Ala Ser Tyr Tyr Val Ser Tyr Arg Arg Glu Ala
              485                      490                      495
Phe Ala Gln Ile Lys Leu Pro Lys Tyr Ser Leu Pro Lys Asp Met His
              500                      505                      510
Ile Ile Ser Thr Asp Glu Asn Gln Val Phe Ala Ala Val Gln Glu Trp
          515                      520                      525
Asn Gln Asn Asp Thr Tyr Asn Leu Tyr Ile Ser Asp Thr Arg Gly Ile
          530                      535                      540
Tyr Phe Thr Leu Ala Met Glu Asn Ile Lys Ser Ser Arg Gly Leu Met
545                      550                      555                      560
Gly Asn Ile Ile Ile Glu Leu Tyr Glu Val Ala Gly Ile Lys Gly Ile
              565                      570                      575
Phe Leu Ala Asn Lys Lys Val Asp Asp Gln Val Lys Thr Tyr Ile Thr
              580                      585                      590
Tyr Asn Lys Gly Arg Asp Trp Arg Leu Leu Gln Ala Pro Asp Val Asp
          595                      600                      605
Leu Arg Gly Ser Pro Val His Cys Leu Leu Pro Phe Cys Ser Leu His
          610                      615                      620
Leu His Leu Gln Leu Ser Glu Asn Pro Tyr Ser Ser Gly Arg Ile Ser
625                      630                      635                      640
Ser Lys Glu Thr Ala Pro Gly Leu Val Val Ala Thr Gly Asn Ile Gly
```

3445

```
                        645                   650                   655
Pro Glu Leu Ser Tyr Thr Asp Ile Gly Val Phe Ile Ser Ser Asp Gly
            660                   665                   670
Gly Asn Thr Trp Arg Gln Ile Phe Asp Glu Glu Tyr Asn Val Trp Phe
            675                   680                   685
Leu Asp Trp Gly Gly Ala Leu Val Ala Met Lys His Thr Pro Leu Pro
            690                   695                   700
Val Arg His Leu Trp Val Ser Phe Asp Glu Gly His Ser Trp Asp Lys
705                   710                   715                   720
Tyr Gly Phe Thr Ser Val Pro Leu Phe Val Asp Gly Ala Leu Val Glu
                        725                   730                   735
Ala Gly Met Glu Thr His Ile Met Thr Val Phe Gly His Phe Ser Leu
            740                   745                   750
Arg Ser Glu Trp Gln Leu Val Lys Val Asp Tyr Lys Ser Ile Phe Ser
            755                   760                   765
Arg His Cys Thr Lys Glu Asp Tyr Gln Thr Trp His Leu Leu Asn Gln
            770                   775                   780
Gly Glu Pro Cys Val Met Gly Glu Arg Lys Ile Phe Lys Lys Arg Lys
785                   790                   795                   800
Pro Gly Ala Gln Cys Ala Leu Gly Arg Asp His Ser Gly Ser Val Val
            805                   810                   815
Ser Glu Pro Cys Val Cys Ala Asn Trp Asp Phe Glu Cys Asp Tyr Gly
            820                   825                   830
Tyr Glu Arg His Gly Glu Ser Gln Cys Val Pro Ala Phe Trp Tyr Asn
            835                   840                   845
Pro Ala Ser Pro Ser Lys Asp Cys Ser Leu Gly Gln Ser Tyr Leu Asn
            850                   855                   860
Ser Thr Gly Tyr Arg Arg Ile Val Ser Asn Asn Cys Thr Asp Gly Leu
865                   870                   875                   880
Arg Glu Lys Tyr Thr Ala Lys Ala Gln Met Cys Pro Gly Lys Ala Pro
            885                   890                   895
Arg Gly Leu His Val Val Thr Thr Asp Gly Arg Leu Val Ala Glu Gln
            900                   905                   910
Gly His Asn Ala Thr Phe Ile Ile Leu Met Glu Glu Gly Asp Leu Gln
            915                   920                   925
Arg Thr Asn Ile Gln Leu Asp Phe Gly Asp Gly Ile Ala Val Ser Tyr
            930                   935                   940
Ala Asn Phe Ser Pro Ile Glu Asp Gly Ile Lys His Val Tyr Lys Ser
945                   950                   955                   960
Ala Gly Ile Phe Gln Val Thr Ala Tyr Ala Glu Asn Asn Leu Gly Ser
            965                   970                   975
Asp Thr Ala Val Leu Phe Leu His Val Val Cys Pro Val Glu His Val
            980                   985                   990
His Leu Arg Val Pro Phe Val Ala Ile Arg Asn Lys Glu Val Asn Ile
            995                   1000                  1005
Ser Ala Val Val Trp Pro Ser Gln Leu Gly Thr Leu Thr Tyr Phe Trp
            1010                  1015                  1020
Trp Phe Gly Asn Ser Thr Lys Pro Leu Ile Thr Leu Asp Ser Ser Ile
1025                  1030                  1035                  1040
Ser Phe Thr Phe Leu Ala Glu Gly Thr Asp Thr Ile Thr Val Gln Val
            1045                  1050                  1055
Ala Ala Gly Asn Ala Leu Ile Gln Asp Thr Lys Glu Ile Ala Val His
            1060                  1065                  1070
Glu Tyr Phe Gln Ser Gln Leu Leu Ser Phe Ser Pro Asn Leu Asp Tyr
```

```
                1075                     1080                    1085
    His Asn Pro Asp Ile Pro Glu Trp Arg Lys Asp Ile Gly Asn Val Ile
        1090                     1095                    1100
    Lys Arg Ala Leu Val Lys Val Thr Ser Val Pro Glu Asp Gln Ile Leu
    1105                     1110                    1115                    1120
    Ile Ala Val Phe Pro Gly Leu Pro Thr Ser Ala Glu Leu Phe Ile Leu
                1125                     1130                    1135
    Pro Pro Lys Asn Leu Thr Glu Arg Arg Lys Gly Asn Glu Gly Asp Leu
                1140                     1145                    1150
    Glu Gln Ile Val Glu Thr Leu Phe Asn Ala Leu Asn Gln Asn Leu Val
            1155                     1160                    1165
    Gln Phe Glu Leu Lys Pro Gly Val Gln Val Ile Val Tyr Val Thr Gln
        1170                     1175                    1180
    Leu Thr Leu Ala Pro Leu Val Asp Ser Ser Ala Gly His Ser Ser Ser
    1185                     1190                    1195                    1200
    Ala Met Leu Met Leu Leu Ser Val Val Phe Val Gly Leu Ala Val Phe
                1205                     1210                    1215
    Leu Ile Tyr Lys Phe Lys Arg Lys Ile Pro Trp Ile Asn Ile Tyr Ala
                1220                     1225                    1230
    Gln Val Gln His Asp Lys Glu Gln Glu Met Ile Gly Ser Val Ser Gln
            1235                     1240                    1245
    Ser Glu Asn Ala Pro Lys Ile Thr Leu Ser Asp Phe Thr Glu Pro Glu
        1250                     1255                    1260
    Glu Leu Leu Asp Lys Glu Leu Asp Thr Arg Val Ile Gly Gly Ile Ala
    1265                     1270                    1275                    1280
    Thr Ile Ala Asn Ser Glu Ser Thr Lys Glu Ile Pro Asn Cys Thr Ser
                1285                     1290                    1295
    Val
```

```
<210> 4249
<211> 553
<212> DNA
<213> Homo sapiens

<400> 4249
nnccgggccc tccccaaaaa ggaccaggtt gtccagaaaa gtgagcagct aaaactgttt
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ctaagaaact caactgcatc cagaacaaag attaagatga tttataaaaa tgctaaaaca
120
cccagcacgc aacatggtaa aattcgcaat gcctcaggca tcaacccgag agtaccaggc
180
ccacaggaag gcagcataat aggaccccaa acaaggagga aaagcagcct cctgaaaccg
240
accctgatat cagaaccagc agacatgggc actcagcagt tcttacaact gaatcccaat
300
ctgcaaaagt ttagtagaga catggaagac gtaaagggga ccccaagcaa gcctctagag
360
aattataaca tgttggctgg gcttggtggc tcacgcgtgt catcgcagca ctttgggagg
420
ctgaggcagg aggatcgctt gagcccagga gttcaagacc agcctggacc acatagtgag
480
accccatct cataaaaaat aaaaaaaaat tgaattacaa cacgaggtga caaaagcact
540
```

ggatgagatt aac
553

<210> 4250
<211> 164
<212> PRT
<213> Homo sapiens

<400> 4250
Xaa Arg Ala Leu Pro Lys Lys Asp Gln Val Val Gln Lys Ser Glu Gln
 1   5   10   15
Leu Lys Leu Phe Leu Arg Asn Ser Thr Ala Ser Arg Thr Lys Ile Lys
            20   25   30
Met Ile Tyr Lys Asn Ala Lys Thr Pro Ser Thr Gln His Gly Lys Ile
        35   40   45
Arg Asn Ala Ser Gly Ile Asn Pro Arg Val Pro Gly Pro Gln Glu Gly
        50   55   60
Ser Ile Ile Gly Pro Gln Thr Arg Arg Lys Ser Ser Leu Leu Lys Pro
65   70   75   80
Thr Leu Ile Ser Glu Pro Ala Asp Met Gly Thr Gln Gln Phe Leu Gln
                85   90   95
Leu Asn Pro Asn Leu Gln Lys Phe Ser Arg Asp Met Glu Asp Val Lys
            100   105   110
Gly Thr Pro Ser Lys Pro Leu Glu Asn Tyr Asn Met Leu Ala Gly Leu
        115   120   125
Gly Gly Ser Arg Val Ser Ser Gln His Phe Gly Arg Leu Arg Gln Glu
        130   135   140
Asp Arg Leu Ser Pro Gly Val Gln Asp Gln Pro Gly Pro His Ser Glu
145   150   155   160
Thr Pro Ile Ser

<210> 4251
<211> 1574
<212> DNA
<213> Homo sapiens

<400> 4251
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60
aaaagggcgg cgcggggggg gtcccccaca caaaaaaagg ggggaaagg aattcgcccc
120
ggggggggggc caggccctaa ccccatttat ttcattccac agatgagggc aaccttaaga
180
gggaaggggg agatggcagg gccagcgggc gcaggaagtg ccttcccacc cccaggacct
240
gacacatctc gtctcccctc ttttccgcac tgtgggcaca aagacacttt ttcttccgca
300
ggggcgggag cccctagttc caacactgag gacgcgtgac atggtgggca ccggaaagga
360
ggggacttct cctgcacccc aagaagtggt ggggagattg ctgcccctat agccatatct
420
cggccccttc ccactcacca cccccacccc aggtgctggg ggtcccttat ttttatgcaa
480

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taactgagct tgatggggggt ggggcagggggg ccagttgagc caatcaccag cctccatatc
540
acagatcctg accctgaatc tcaggagctg cagatcgggg gcacctgccc tgacatcacc
600
aaacgctacc tgcgcctgac ctgtgccccc gacccgtcca ccgtgcgccc tgtggcagtt
660
ttgaaaaagt cgctgtgcat ggtcaagtgc cactggaaag agaagcagga ctacgcgttt
720
gcctgcgagc agatgaagtc gatccggcag gatctgacgg tgcagggcat ccgcaccgag
780
ttcacggtgg aggtgtacga gacccatgcc cggatcgcct tggagaaggg tgaccatgaa
840
gagtttaacc agtgccagac gcagctcaag tcgctgtacg ccgagaactt gcctggcaat
900
gtgggcgagt ttactgccta ccgaatcctc tactacatct tcaccaagaa ctcgggagac
960
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1020
gccttggcat taaggacagc ctgggccctg ggcaactacc accgcttttt ccggctctac
1080
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1140
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1200
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1260
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1380
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1440
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1560
agacagcctc tggt
1574
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<210> 4252
<211> 352
<212> PRT
<213> Homo sapiens
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<400> 4252
Met Gly Val Gly Arg Gly Pro Val Glu Pro Ile Thr Ser Leu His Ile
1               5                   10                  15
Thr Asp Pro Asp Pro Glu Ser Gln Glu Leu Gln Ile Gly Gly Thr Cys
                20                  25                  30
Pro Asp Ile Thr Lys Arg Tyr Leu Arg Leu Thr Cys Ala Pro Asp Pro
            35                  40                  45
Ser Thr Val Arg Pro Val Ala Val Leu Lys Lys Ser Leu Cys Met Val
        50                  55                  60
Lys Cys His Trp Lys Glu Lys Gln Asp Tyr Ala Phe Ala Cys Glu Gln
```

```
      65                    70                    75                    80
      Met Lys Ser Ile Arg Gln Asp Leu Thr Val Gln Gly Ile Arg Thr Glu
                        85                    90                    95
      Phe Thr Val Glu Val Tyr Glu Thr His Ala Arg Ile Ala Leu Glu Lys
                    100                   105                   110
      Gly Asp His Glu Glu Phe Asn Gln Cys Gln Thr Gln Leu Lys Ser Leu
                    115                   120                   125
      Tyr Ala Glu Asn Leu Pro Gly Asn Val Gly Glu Phe Thr Ala Tyr Arg
          130                   135                   140
      Ile Leu Tyr Tyr Ile Phe Thr Lys Asn Ser Gly Asp Ile Thr Thr Glu
      145                   150                   155                   160
      Leu Ala Tyr Leu Thr Arg Glu Leu Lys Ala Asp Pro Cys Val Ala His
                    165                   170                   175
      Ala Leu Ala Leu Arg Thr Ala Trp Ala Leu Gly Asn Tyr His Arg Phe
                    180                   185                   190
      Phe Arg Leu Tyr Cys His Ala Pro Cys Met Ser Gly Tyr Leu Val Asp
                    195                   200                   205
      Lys Phe Ala Asp Arg Glu Arg Lys Val Ala Leu Lys Ala Met Ile Lys
          210                   215                   220
      Thr Tyr Val Val Pro Ser Ser Leu Leu Pro Leu Leu Phe Pro Ser Phe
      225                   230                   235                   240
      Arg Leu Ala Pro Pro Leu Arg Pro Ala Pro Gly Arg Arg Pro Pro Pro
                    245                   250                   255
      Ala Pro Asn Pro Cys Pro Gly Pro Cys Phe Pro Ile Ile Phe Leu His
                    260                   265                   270
      Ser Ala Leu Pro Ser Pro Val Pro Leu Ala Leu Leu Val Gly His Leu
                    275                   280                   285
      Cys Val Pro Gly His Ser Ser Pro Ser Pro His Cys Ser Gln Leu Thr
          290                   295                   300
      Ala Ser Gly Ala Ser Ser Pro Pro His Leu Cys Val Ser Ser Ser Cys
      305                   310                   315                   320
      Ser Leu Leu Pro Gly Pro Pro Ser Ser Leu Leu Ala Leu Gly Phe Leu
                    325                   330                   335
      Arg Thr Leu Arg Ser Leu Leu Ser Gln Leu Val Ala Val Leu Pro Pro
                    340                   345                   350
```

<210> 4253
<211> 1287
<212> DNA
<213> Homo sapiens

<400> 4253
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ggatagatag aactatcggc cccaattcct cagccctacc tgcaaccacc gcttgccatg
120
gtttccttgt gggtggaggg tactttcccg cccCctggtt tcgggcttgc ccacgtggct
180
tgctctggcc atggaatgaa gcagaaacga aagcctgcca gttctgagcc tatgccggaa
240
gacgccttgg gcggttccgc ggtccctgtg cgcttccacc ttcacccaga aggacttctc
300
tggtgcagcc gctgcttctt cagccacggc ccaaaaggat cggagccccc tggccgatcc
360

gcaggtctgc agggagccac agagcgcagc ggccggccca gcgttcaagc ccaagcacag
420
gcctgcgaga accttgttcc agccaccgtt tgggatggtt gattaggact tgttgcagtg
480
gcggtagctc accaatccag tgcgtgcacc cgctccttta ttaggctata gagccagtgg
540
ctcccacagg gacctgatac aacagtgcgt taaataagga gcatattgag ctctcatgtc
600
gtaagccagt ggagaagtcc agggctagtg tgggggctcc ggcgggggct gtggccccca
660
tccgcatgga gcctccccat ggttcacagg tctcagtctt cggagccttc ggccctgcga
720
gcccgaacgg tccacagggc ggcgccagac cctctttcga acgccatcct ctaaagcggc
780
tggaacaagg ttcttgcagg cctgtgcttg ggcttgaacg ctgggccggg ccgctgcgct
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ctgtggctcc ctgtaggcct gcggatcggc cagggggctc cgttcctttt gggcggaggc
900
tgaagaagca gcggctgcac cagagaaggc cctctgggtg aaggtgggag cgcacggggc
960
ccgcggaacc acctaggcg acttcagacg tgggctcgga actggcagcc tttcgtttct
1020
gcttcattcc aaggccagag caagccacgt gggcaaaccc aaagccaggg gacaggaaag
1080
tatcctccac ccacaacgaa accatggcaa gcggtggatg caggtacggc caatagtcta
1140
tctatcccgg tgagtgagga gacctgcttt gagggttgca caacctggat ctgctttac
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1260
tcctctaaag cctcggctcc aaccggt
1287

<210> 4254
<211> 114
<212> PRT
<213> Homo sapiens

<400> 4254
Met Val Ser Leu Trp Val Glu Gly Thr Phe Pro Pro Pro Gly Phe Gly
1   5   10   15
Leu Ala His Val Ala Cys Ser Gly His Gly Met Lys Gln Lys Arg Lys
                20   25   30
Pro Ala Ser Ser Glu Pro Met Pro Glu Asp Ala Leu Gly Gly Ser Ala
            35   40   45
Val Pro Val Arg Phe His Leu His Pro Glu Gly Leu Leu Trp Cys Ser
        50   55   60
Arg Cys Phe Phe Ser His Gly Pro Lys Gly Ser Glu Pro Pro Gly Arg
65   70   75   80
Ser Ala Gly Leu Gln Gly Ala Thr Glu Arg Ser Gly Arg Pro Ser Val
                85   90   95
Gln Ala Gln Ala Gln Ala Cys Glu Asn Leu Val Pro Ala Thr Val Trp
            100   105   110
Asp Gly

<210> 4255
<211> 2205
<212> DNA
<213> Homo sapiens

<400> 4255
cccgggcctc aaattctctg tcagaaatga agtaatggct accagccacg tcacagatga
60
atggatgaca caaatggaaa tgagtagcct gaacacttac attgtccgcc gttgcatagc
120
aacacccaat ggcgtcctca gaatttattc tgggtccctc atgggacaag cattggatcc
180
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tccttactta gatgttggag gagctggtta tgttgtgaca atcagtcaca caattcattc
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660
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840
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1140
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1200
cctgtgggtc ttgtggctgg agggatcatg ggatgcatca atggttttgg tcctggcggt
1260
gtatgcctac cgccaccaga ttcatcgccg gagccatcag catatgtctc ctcttgctgc
1320
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1380

```
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1740
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1800
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2040
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2100
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2160
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2205
```

```
<210> 4256
<211> 384
<212> PRT
<213> Homo sapiens

<400> 4256
Met Ala Thr Ser His Val Thr Asp Glu Trp Met Thr Gln Met Glu Met
1               5                   10                  15
Ser Ser Leu Asn Thr Tyr Ile Val Arg Arg Cys Ile Ala Thr Pro Asn
            20                  25                  30
Gly Val Leu Arg Ile Tyr Ser Gly Ser Leu Met Gly Gln Ala Leu Asp
        35                  40                  45
Pro Thr Arg Lys Gln Trp Tyr Leu His Ala Val Ala Asn Pro Gly Leu
    50                  55                  60
Ile Ser Leu Thr Gly Pro Tyr Leu Asp Val Gly Gly Ala Gly Tyr Val
65                  70                  75                  80
Val Thr Ile Ser His Thr Ile His Ser Ser Ser Thr Gln Leu Ser Ser
                85                  90                  95
Gly His Thr Val Ala Val Met Gly Ile Asp Phe Thr Leu Arg Tyr Phe
            100                 105                 110
Tyr Lys Val Leu Met Asp Leu Leu Pro Val Cys Asn Gln Asp Gly Gly
        115                 120                 125
Asn Lys Ile Arg Cys Phe Ile Met Glu Asp Arg Gly Tyr Leu Val Ala
    130                 135                 140
His Pro Thr Leu Ile Asp Pro Lys Gly His Ala Pro Val Glu Gln Gln
```

```
145                   150                  155                    160
His Ile Thr His Lys Glu Pro Leu Val Ala Asn Asp Ile Leu Asn His
                  165                  170                    175
Pro Asn Phe Val Lys Lys Asn Leu Cys Asn Ser Phe Ser Asp Arg Thr
                  180                  185                    190
Val Gln Arg Phe Tyr Lys Phe Asn Thr Ser Leu Ala Gly Asp Leu Thr
                  195                  200                    205
Asn Leu Val His Gly Ser His Cys Ser Lys Tyr Arg Leu Ala Arg Ile
              210                  215                  220
Pro Gly Thr Asn Ala Phe Val Gly Ile Val Asn Glu Thr Cys Asp Ser
          225                  230                  235              240
Leu Ala Phe Cys Ala Cys Ser Met Val Asp Arg Leu Cys Leu Asn Cys
                  245                  250                    255
His Arg Met Glu Gln Asn Glu Cys Glu Cys Pro Cys Glu Cys Pro Leu
                  260                  265                    270
Glu Val Asn Glu Cys Thr Gly Asn Leu Thr Asn Ala Glu Asn Arg Asn
                  275                  280                    285
Pro Ser Cys Glu Val His Gln Glu Pro Val Thr Tyr Thr Ala Ile Asp
          290                  295                  300
Pro Gly Leu Gln Asp Ala Leu His Gln Cys Val Asn Ser Arg Cys Ser
      305                  310                  315                320
Gln Arg Leu Glu Ser Gly Asp Cys Phe Gly Val Leu Asp Cys Glu Trp
                  325                  330                    335
Cys Met Val Asp Ser Asp Gly Lys Thr His Leu Asp Lys Pro Tyr Cys
                  340                  345                    350
Ala Pro Gln Lys Glu Cys Phe Gly Gly Ile Val Gly Ala Lys Ser Pro
                  355                  360                    365
Tyr Val Asp Asp Met Gly Ala Ile Gly Asp Glu Val Ile Thr Leu Lys
      370                  375                  380
```

```
<210> 4257
<211> 1541
<212> DNA
<213> Homo sapiens

<400> 4257
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ttcttgacat cttcccaaaa gtcacctgca ggcctcccaa agaggtgata gacatggagc
120
tgagtgccct gaggagtgac acagagcctg ggatggatct ttgggagttc tgcagcgaaa
180
ctttccaaag accttaccag tatttaagac gattcaatcc aaacccagac cttaacccgg
240
ttcaagattc agaaaggttt tgccgaaggc cccccggagg aatgcctcca gcatttcctg
300
tttcactggg gggtaataaa cccatcctgg ccaaacctcc ggaactttgc tcggttcctg
360
aattatcagc tcagagattg tgaggcctct ctcttctgca atccgagttt tattggcgac
420
acactgaggg gcttcaagaa gttcgtggtg accttcatga tctttatggc aagagatttt
480
gccacaccat cactccacac ctctgaccaa agcccgggga agcacatggt caccatggat
540
```

3454

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ggggttaggg aagaagatct agcgcccttc tccctccgga agaggtggga gtcggagcct
600
cacccatacg ttttcttcaa tgacgaccac acaaccatga cattcatcgg cttccatctg
660
cagcccaaca tcaacggcag tgtcgatgcc atcagtcact tgactgggaa ggtcatcaag
720
agagacgtca tgaccaggga cctgtaccag ggcctgctgc tccagagggt gcccttcaat
780
gtcgactttg ataaactgcc cagacacaag aaacttgaga ggctctgcct gaccttaggg
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900
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960
ggctgtggga aaaccaggct tattaaattc cttagcgacc tgcggcgtgg tggtaccaat
1020
gctgacacca taaagctggt caaggtgcac ggaggaacaa ctgcagacat gatctactcc
1080
agagtcaggg aggctgaaaa tgtggccttc gccaataagg accaacatca gttggacacc
1140
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1200
tgtgatcata tggtggatgg ccagcctctg gctgaggact ctggcctgca tattatagct
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gcctgcaatc catacccgga gaactctgag gagatgatct gccgtttgga gtcagctggt
1320
ttgggctaca gggttagtat ggaggagacg gccgacaggc tgggctccat tcctctgggg
1380
tacacgtgta cgcagcgctg aagagctcct cgacggcact gacgtcctcc tttccaggat
1440
ttcaacgata tacaaatggc aggggttccg aagccacatt ttcccattta tatccattaa
1500
gtattgtaaa atgaggagct tgaaaagaaa cacccgaatt c
1541
```

```
<210> 4258
<211> 314
<212> PRT
<213> Homo sapiens

<400> 4258
Met Ile Phe Met Ala Arg Asp Phe Ala Thr Pro Ser Leu His Thr Ser
1               5                   10                  15
Asp Gln Ser Pro Gly Lys His Met Val Thr Met Asp Gly Val Arg Glu
                20                  25                  30
Glu Asp Leu Ala Pro Phe Ser Leu Arg Lys Arg Trp Glu Ser Glu Pro
            35                  40                  45
His Pro Tyr Val Phe Phe Asn Asp Asp His Thr Thr Met Thr Phe Ile
        50                  55                  60
Gly Phe His Leu Gln Pro Asn Ile Asn Gly Ser Val Asp Ala Ile Ser
65                  70                  75                  80
His Leu Thr Gly Lys Val Ile Lys Arg Asp Val Met Thr Arg Asp Leu
                85                  90                  95
Tyr Gln Gly Leu Leu Leu Gln Arg Val Pro Phe Asn Val Asp Phe Asp
```

```
                100                   105                   110
Lys Leu Pro Arg His Lys Lys Leu Glu Arg Leu Cys Leu Thr Leu Gly
        115                   120                   125
Ile Pro Gln Ala Thr Asp Pro Asp Lys Thr Tyr Glu Leu Thr Thr Asp
        130                   135                   140
Asn Met Leu Lys Ile Leu Ala Ile Glu Met Arg Phe Arg Cys Gly Ile
145                   150                   155                   160
Pro Val Ile Ile Met Gly Glu Thr Gly Cys Gly Lys Thr Arg Leu Ile
                165                   170                   175
Lys Phe Leu Ser Asp Leu Arg Arg Gly Gly Thr Asn Ala Asp Thr Ile
                180                   185                   190
Lys Leu Val Lys Val His Gly Gly Thr Thr Ala Asp Met Ile Tyr Ser
            195                   200                   205
Arg Val Arg Glu Ala Glu Asn Val Ala Phe Ala Asn Lys Asp Gln His
        210                   215                   220
Gln Leu Asp Thr Ile Leu Phe Phe Asp Glu Ala Asn Thr Thr Glu Ala
225                   230                   235                   240
Ile Ser Cys Ile Lys Glu Val Leu Cys Asp His Met Val Asp Gly Gln
                245                   250                   255
Pro Leu Ala Glu Asp Ser Gly Leu His Ile Ile Ala Ala Cys Asn Pro
                260                   265                   270
Tyr Pro Glu Asn Ser Glu Glu Met Ile Cys Arg Leu Glu Ser Ala Gly
            275                   280                   285
Leu Gly Tyr Arg Val Ser Met Glu Glu Thr Ala Asp Arg Leu Gly Ser
        290                   295                   300
Ile Pro Leu Gly Tyr Thr Cys Thr Gln Arg
305                   310
```

```
<210> 4259
<211> 377
<212> DNA
<213> Homo sapiens

<400> 4259
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cctgaggagc cgccccggc gccgcggccc agccgtgagc agaagtgtgt gaagtgcaag
120
gaagcgcagc ccgttgtggt gatacgagcc ggagatgcct tctgcaggga ctgtttcaag
180
gccttctacg tccacaagtt cagagccatg ctgggcaaga accggctcat ctttccaggc
240
gagaaggtgc tcttggcgtg gtctgggggg ccttcgtcca gctccatggt ctggcaggtt
300
cttgagggcc tgagccaaga ttctgccaaa agactgcgct ttgtggcagg agtcatcttt
360
gttgacgagg gagcagc
377

<210> 4260
<211> 125
<212> PRT
<213> Homo sapiens
```

<400> 4260
```
Ser Ala Thr Gly Pro Gly Val Pro Met Cys Gln Val Gly Glu Asp Tyr
1               5               10              15
Gly Glu Pro Ala Pro Glu Glu Pro Pro Ala Pro Arg Pro Ser Arg
        20              25              30
Glu Gln Lys Cys Val Lys Cys Lys Glu Ala Gln Pro Val Val Val Ile
        35              40              45
Arg Ala Gly Asp Ala Phe Cys Arg Asp Cys Phe Lys Ala Phe Tyr Val
    50              55              60
His Lys Phe Arg Ala Met Leu Gly Lys Asn Arg Leu Ile Phe Pro Gly
65              70              75              80
Glu Lys Val Leu Leu Ala Trp Ser Gly Gly Pro Ser Ser Ser Ser Met
            85              90              95
Val Trp Gln Val Leu Glu Gly Leu Ser Gln Asp Ser Ala Lys Arg Leu
        100             105             110
Arg Phe Val Ala Gly Val Ile Phe Val Asp Glu Gly Ala
        115             120             125
```

<210> 4261
<211> 592
<212> DNA
<213> Homo sapiens

<400> 4261
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acgcgttact cctaccaggt tgtagcatgc atcttttga gagagcagct gggatcgagt
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atactcttga cttaaatatg tttgtttata aagacaaatg gagaaatcaa ttttttttccc
120
tgaattctta ggagcacttt agtgaataaa gaacctgaca gtatgctggc ccacatgttt
180
aaggacaaag gtgtctgggg aaataagcaa gatcatagag gagctttctt aattgaccga
240
agtcctgagt acttcgaacc cattttgaac tacttgcgtc atggacagct cattgtaaat
300
gatggcatta atttattggg tgtgttagaa gaagcaagat tttttggtat tgactcattg
360
attgaacacc tagaagtggc aataaagaat tctcaaccac cggaggatca ttcaccaata
420
tcccgaaagg aatttgtccg attttttgcta gcaactccaa ccaagtcaga actgcgatgc
480
cagggtttga acttcagtgg tgctgatctt tctcgtttgg accttcgata cattaacttc
540
aaaatggcca atttaagccg ctgtaatctt gcacatgcaa atctttgctg tg
592
```

<210> 4262
<211> 156
<212> PRT
<213> Homo sapiens

<400> 4262
```
Ile Leu Arg Ser Thr Leu Val Asn Lys Glu Pro Asp Ser Met Leu Ala
1               5               10              15
His Met Phe Lys Asp Lys Gly Val Trp Gly Asn Lys Gln Asp His Arg
```

```
                    20                    25                    30
Gly Ala Phe Leu Ile Asp Arg Ser Pro Glu Tyr Phe Glu Pro Ile Leu
            35                    40                    45
Asn Tyr Leu Arg His Gly Gln Leu Ile Val Asn Asp Gly Ile Asn Leu
        50                    55                    60
Leu Gly Val Leu Glu Glu Ala Arg Phe Phe Gly Ile Asp Ser Leu Ile
65                    70                    75                    80
Glu His Leu Glu Val Ala Ile Lys Asn Ser Gln Pro Pro Glu Asp His
                85                    90                    95
Ser Pro Ile Ser Arg Lys Glu Phe Val Arg Phe Leu Leu Ala Thr Pro
                100                   105                   110
Thr Lys Ser Glu Leu Arg Cys Gln Gly Leu Asn Phe Ser Gly Ala Asp
            115                   120                   125
Leu Ser Arg Leu Asp Leu Arg Tyr Ile Asn Phe Lys Met Ala Asn Leu
        130                   135                   140
Ser Arg Cys Asn Leu Ala His Ala Asn Leu Cys Cys
145                   150                   155
```

<210> 4263
<211> 7710
<212> DNA
<213> Homo sapiens

<400> 4263

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cagaggaatc tgttcctcaa ggcattcacg gacttcctgg ccttcatggt cctctttaac
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120
ttcatcacct gggacgaaga catgtttgac gaggagactg gcgaggggcc tctggtgaac
180
acgtcggacc tcaatgaaga gctgggacag gtggagtaca tcttcacaga caagaccggc
240
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ccccacgtca tctgcaacgg gcaggtcctc ccagagtcgt caggaatcga catgattgac
360
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420
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480
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540
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600
agggagaacc acatcgaaag gtttgaattg ctggaaattt tgagttttga ctcagtcaga
660
aggagaatga gtgtaattgt aaaatctgct acaggagaaa tttatctgtt ttgcaaagga
720
gcagattctt cgatattccc ccgagtgata gaaggcaaag ttgaccagat ccgagccaga
780
gtggagcgta acgcagtgga ggggctccga actttgtgtg ttgcttataa aaggctgatc
840
caagaagaat atgaaggcat ttgtaagctg ctgcaggctg ccaaagtggc ccttcaagat
900
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cgagagaaaa agttagcaga agcctatgag caaatagaga aagatcttac tctgcttggt
960
gctacagctg ttgaggaccg gctgcaggag aaagctgcag acaccatcga ggccctgcag
1020
aaggccggga tcaaagtctg ggttctcacg ggagacaaga tggagacggc cgcggccacg
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2160
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2520
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ggttcccatc accactgcag ttccatccca agtcacagct gccctaggtc ccgtgtggga
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2640

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3000

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3180

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atcctctgtc cccgtggagg ggtcaacacc aaggtggtgt tcgtgcacca gaacctgtct
3420

cgggctgacg ggggtggcac acaggacacg ggtggatccc aacaggcagc accgcacctc
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cgcccgcctc ccgcactgca gctccgcccg ccgggctctg cgtctccacg tcccctcgtc
3540

ccatccccac gtccctcat cccgtcacct cgtccccaca tccccttgcc ccgtcacctc
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3660

cctctcgtcc ccttgtcccg tccccacata ccctcgtccc catgtcccca cgcagggctc
3720

tccttcgtct taggatctgt ccagcgctgc tctgggtggg ttagcaaccc cagggctgct
3780

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3840

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3900

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4080

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4140

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5460
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5520
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5640
acctacagac atgcagaaca tgcacgtgta cacataccac agacacgcgt gtgcatgctc
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ctacacaata catatgcaca tatcatgaac agcataagtt cctacacacg gacgtgtgat
5760
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6000
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6240
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6480
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7260
gtgtctgact taaaattata atgtctgcgt caccatttaa aatgtctgtt cattatgtaa
7320
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7380
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3462

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atcataaata ctggagttta tttttaaatt attaaacata gtaggtgcat taacataaat
7440
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7500
gttaattaaa ccaatctaac atttcagtaa agtttatttt gtatgcttct gtttttaact
7560
tttatttctg tagataaact gactggataa tattatattg gacttttctc tagattatct
7620
aagcaggaga cctgaatctg cttgcaataa agaataaaag tctgcttcag tttctttata
7680
aagaaactca aaaaaaaaaa aaaaaaaaac
7710
```

<210> 4264
<211> 797
<212> PRT
<213> Homo sapiens

<400> 4264

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Gln Arg Asn Leu Phe Leu Lys Ala Phe Thr Asp Phe Leu Ala Phe Met
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Val Leu Phe Asn Tyr Ile Ile Pro Val Ser Met Tyr Val Thr Val Glu
                20                  25                  30
Met Gln Lys Phe Leu Gly Ser Tyr Phe Ile Thr Trp Asp Glu Asp Met
            35                  40                  45
Phe Asp Glu Glu Thr Gly Glu Gly Pro Leu Val Asn Thr Ser Asp Leu
        50                  55                  60
Asn Glu Glu Leu Gly Gln Val Glu Tyr Ile Phe Thr Asp Lys Thr Gly
65                  70                  75                  80
Thr Leu Thr Glu Asn Asn Met Glu Phe Lys Glu Cys Cys Ile Glu Gly
                85                  90                  95
His Val Tyr Val Pro His Val Ile Cys Asn Gly Gln Val Leu Pro Glu
                100                 105                 110
Ser Ser Gly Ile Asp Met Ile Asp Ser Ser Pro Ser Val Asn Gly Arg
            115                 120                 125
Glu Arg Glu Glu Leu Phe Phe Arg Ala Leu Cys Leu Cys His Thr Val
        130                 135                 140
Gln Val Lys Asp Asp Asp Ser Val Asp Gly Pro Arg Lys Ser Pro Asp
145                 150                 155                 160
Gly Gly Lys Ser Cys Val Tyr Ile Ser Ser Ser Pro Asp Glu Val Ala
                165                 170                 175
Leu Val Glu Gly Val Gln Arg Leu Gly Phe Thr Tyr Leu Arg Leu Lys
            180                 185                 190
Asp Asn Tyr Met Glu Ile Leu Asn Arg Glu Asn His Ile Glu Arg Phe
            195                 200                 205
Glu Leu Leu Glu Ile Leu Ser Phe Asp Ser Val Arg Arg Arg Met Ser
        210                 215                 220
Val Ile Val Lys Ser Ala Thr Gly Glu Ile Tyr Leu Phe Cys Lys Gly
225                 230                 235                 240
Ala Asp Ser Ser Ile Phe Pro Arg Val Ile Glu Gly Lys Val Asp Gln
                245                 250                 255
Ile Arg Ala Arg Val Glu Arg Asn Ala Val Glu Gly Leu Arg Thr Leu
            260                 265                 270
Cys Val Ala Tyr Lys Arg Leu Ile Gln Glu Glu Tyr Glu Gly Ile Cys
```

3463

```
         275                    280                    285
Lys Leu Leu Gln Ala Ala Lys Val Ala Leu Gln Asp Arg Glu Lys Lys
     290                    295                    300
Leu Ala Glu Ala Tyr Glu Gln Ile Glu Lys Asp Leu Thr Leu Leu Gly
305                    310                    315                    320
Ala Thr Ala Val Glu Asp Arg Leu Gln Glu Lys Ala Ala Asp Thr Ile
                    325                    330                    335
Glu Ala Leu Gln Lys Ala Gly Ile Lys Val Trp Val Leu Thr Gly Asp
                    340                   ·345                    350
Lys Met Glu Thr Ala Ala Ala Thr Cys Tyr Ala Cys Lys Leu Phe Arg
                    355                    360                    365
Arg Asn Thr Gln Leu Leu Glu Leu Thr Thr Lys Arg Ile Glu Glu Gln
          370                    375                    380
Ser Leu His Asp Val Leu Phe Glu Leu Ser Lys Thr Val Leu Arg His
385                    390                    395                    400
Ser Gly Ser Leu Thr Arg Asp Asn Leu Ser Gly Leu Ser Ala Asp Met
                    405                    410                    415
Gln Asp Tyr Gly Leu Ile Ile Asp Gly Ala Ala Leu Ser Leu Ile Met
                    420                    425                    430
Lys Pro Arg Glu Asp Gly Ser Ser Gly Asn Tyr Arg Glu Leu Phe Leu
          435                    440                    445
Glu Ile Cys Arg Ser Cys Ser Ala Val Leu Cys Cys Arg Met Ala Pro
     450                    455                    460
Leu Gln Lys Ala Gln Ile Val Lys Leu Ile Lys Phe Ser Lys Glu His
465                    470                    475                    480
Pro Ile Thr Leu Ala Ile Gly Asp Gly Ala Asn Asp Val Ser Met Ile
                    485                    490                    495
Leu Glu Ala His Val Gly Ile Gly Val Ile Gly Lys Glu Gly Arg Gln
          500                    505                    510
Ala Ala Arg Asn Ser Asp Tyr Ala Ile Pro Lys Phe Lys His Leu Lys
          515                    520                    525
Lys Met Leu Leu Val His Gly His Phe Tyr Tyr Ile Arg Ile Ser Glu
     530                    535                    540
Leu Val Gln Tyr Phe Phe Tyr Lys Asn Val Cys Phe Ile Phe Pro Gln
545                    550                    555                    560
Phe Leu Tyr Gln Phe Phe Cys Gly Phe Ser Gln Gln Thr Val His Asp
                    565                    570                    575
Thr Ala Tyr Leu Thr Leu Tyr Asn Ile Ser Phe Thr Ser Leu Pro Ile
                    580                    585                    590
Leu Leu Tyr Ser Leu Met Glu Gln His Val Gly Ile Asp Val Leu Lys
          595                    600                    605
Arg Asp Pro Thr Leu Tyr Arg Asp Val Ala Lys Asn Ala Leu Leu Arg
     610                    615                    620
Trp Arg Val Phe Ile Tyr Trp Thr Leu Leu Gly Leu Phe Asp Ala Leu
625                    630                    635                    640
Val Phe Phe Phe Gly Ala Tyr Phe Val Phe Glu Asn Thr Thr Val Thr
                    645                    650                    655
Ser Asn Gly Gln Ile Phe Gly Asn Trp Thr Phe Gly Thr Leu Val Phe
                    660                    665                    670
Thr Val Met Val Phe Thr Val Thr Leu Lys Leu Ala Leu Asp Thr His
               675                    680                    685
Tyr Trp Thr Trp Ile Asn His Phe Val Ile Trp Gly Ser Leu Leu Phe
          690                    695                    700
Tyr Val Val Phe Ser Leu Leu Trp Gly Gly Val Ile Trp Pro Phe Leu
```

```
705                  710                  715                  720
Asn Tyr Gln Arg Met Tyr Tyr Val Phe Ile Gln Met Leu Ser Ser Gly
                 725                  730                  735
Pro Ala Trp Leu Ala Ile Val Leu Leu Val Thr Ile Ser Leu Leu Pro
                 740                  745                  750
Asp Val Leu Lys Lys Val Leu Cys Arg Gln Leu Trp Pro Thr Ala Thr
             755                  760                  765
Glu Arg Val Gln Thr Lys Ser Gln Cys Leu Ser Val Glu Gln Ser Thr
         770                  775                  780
Ile Phe Met Leu Ser Gln Thr Ser Ser Ser Leu Ser Phe
785                  790                  795
```

```
<210> 4265
<211> 2422
<212> DNA
<213> Homo sapiens

<400> 4265
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cccttggggg ccggccagga cgtgggccga agctgcatcc tggtctccat tgcgggcaag
120
aatgtcatgc tggactgtgg aatgcacatg ggcttcaatg acgaccgacg cttccctgac
180
ttctcctaca tcacccagaa cggccgccta acagacttcc tggactgtgt gatcattagc
240
cacttccacc tggaccactg cggggcactc ccctacttca gcgagatggt gggctacgac
300
ggccccatct acatgactca ccccacccag gccatctgcc ccatcttgct ggaggactac
360
cgcaagatcg ccgtagacaa gaagggcgag gccaacttct tcacctccca gatgatcaaa
420
gactgcatga agaaggtggt ggctgtccac ctccaccaga cggtccaggt agatgatgag
480
ctggagatca aggcctacta tgcaggccac gtgctggggg cagccatgtt ccagattaaa
540
gtgggctcag agtctgtggt ctacacgggt gattataaca tgaccccaga ccgacactta
600
ggagctgcct ggattgacaa gtgccgcccc aacctgctca tcacagagtc cacgtacgcc
660
acgaccatcc gtgactccaa gcgctgccgg gagcgagact tcctgaagaa agtccacgag
720
accgtggagc gtggtgggaa ggtgctgata cctgtgttcg cgctgggccg cgcccaggag
780
ctctgcatcc tcctggagac cttctgggag cgcatgaacc tgaaggtgcc catctacttc
840
tccacggggc tgaccgagaa ggccaaccac tactacaagc tgttcatccc ctggaccaac
900
cagaagatcc gcaagacttt tgtgcagagg aacatgtttg agttcaagca catcaaggcc
960
ttcgaccggg cttttgctga caacccagga ccgatggttg tgtttgccac gccaggaatg
1020
ctgcacgctg ggcagtccct gcagatcttc cggaaatggg ccggaaacga aaagaacatg
1080
```

3465

```
gtcatcatgc ccggctactg cgtgcagggc accgtcggcc acaagatcct cagcgggcag
1140
cggaagctcg agatggaggg gcggcaggtg ctggaggtca agatgcaggt ggagtacatg
1200
tcattcagcg cacacgcgga cgccaagggc atcatgcagc tggtgggcca ggcagagccg
1260
gagagcgtgc tgctggtgca tggcgaggcc aagaagatgg agttcctgaa gcagaagatc
1320
gagcaggagc tccgggtcaa ctgctacatg ccggccaatg gcgagacggt gacgctgccc
1380
acaagcccca gcatccccgt aggcatctcg ctggggctgc tgaagcggga gatggcgcag
1440
gggctgctcc ctgaggccaa gaagcctcgg ctcctgcacg gcaccctgat catgaaggac
1500
agcaacttcc ggctggtgtc ctcagagcaa gccctcaaag agctgggtct ggctgagcac
1560
cagctgcgct tcacctgccg cgtgcacctg catgacacac gcaaggagca ggagacggca
1620
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1800
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1860
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1980
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2160
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2220
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2280
ttgggcctgg tgtggcctaa ctttggcttg agtgtccagg gtcatccgtg gctcccgaac
2340
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2400
aataagccgt gggctggggc ta
2422
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<210> 4266
<211> 613
<212> PRT
<213> Homo sapiens
```

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<400> 4266
Xaa Gly Gly Pro Arg Gly Ser Gly Ser Ala Ala Glu Thr Met Pro Glu
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  1                    5                     10                    15
Ile Arg Val Thr Pro Leu Gly Ala Gly Gln Asp Val Gly Arg Ser Cys
                20                    25                    30
Ile Leu Val Ser Ile Ala Gly Lys Asn Val Met Leu Asp Cys Gly Met
                35                    40                    45
His Met Gly Phe Asn Asp Asp Arg Arg Phe Pro Asp Phe Ser Tyr Ile
                50                    55                    60
Thr Gln Asn Gly Arg Leu Thr Asp Phe Leu Asp Cys Val Ile Ile Ser
65                    70                    75                    80
His Phe His Leu Asp His Cys Gly Ala Leu Pro Tyr Phe Ser Glu Met
                85                    90                    95
Val Gly Tyr Asp Gly Pro Ile Tyr Met Thr His Pro Thr Gln Ala Ile
                100                   105                   110
Cys Pro Ile Leu Leu Glu Asp Tyr Arg Lys Ile Ala Val Asp Lys Lys
                115                   120                   125
Gly Glu Ala Asn Phe Phe Thr Ser Gln Met Ile Lys Asp Cys Met Lys
                130                   135                   140
Lys Val Val Ala Val His Leu His Gln Thr Val Gln Val Asp Asp Glu
145                   150                   155                   160
Leu Glu Ile Lys Ala Tyr Tyr Ala Gly His Val Leu Gly Ala Ala Met
                165                   170                   175
Phe Gln Ile Lys Val Gly Ser Glu Ser Val Val Tyr Thr Gly Asp Tyr
                180                   185                   190
Asn Met Thr Pro Asp Arg His Leu Gly Ala Ala Trp Ile Asp Lys Cys
                195                   200                   205
Arg Pro Asn Leu Leu Ile Thr Glu Ser Thr Tyr Ala Thr Thr Ile Arg
                210                   215                   220
Asp Ser Lys Arg Cys Arg Glu Arg Asp Phe Leu Lys Lys Val His Glu
225                   230                   235                   240
Thr Val Glu Arg Gly Gly Lys Val Leu Ile Pro Val Phe Ala Leu Gly
                245                   250                   255
Arg Ala Gln Glu Leu Cys Ile Leu Leu Glu Thr Phe Trp Glu Arg Met
                260                   265                   270
Asn Leu Lys Val Pro Ile Tyr Phe Ser Thr Gly Leu Thr Glu Lys Ala
                275                   280                   285
Asn His Tyr Tyr Lys Leu Phe Ile Pro Trp Thr Asn Gln Lys Ile Arg
                290                   295                   300
Lys Thr Phe Val Gln Arg Asn Met Phe Glu Phe Lys His Ile Lys Ala
305                   310                   315                   320
Phe Asp Arg Ala Phe Ala Asp Asn Pro Gly Pro Met Val Val Phe Ala
                325                   330                   335
Thr Pro Gly Met Leu His Ala Gly Gln Ser Leu Gln Ile Phe Arg Lys
                340                   345                   350
Trp Ala Gly Asn Glu Lys Asn Met Val Ile Met Pro Gly Tyr Cys Val
                355                   360                   365
Gln Gly Thr Val Gly His Lys Ile Leu Ser Gly Gln Arg Lys Leu Glu
                370                   375                   380
Met Glu Gly Arg Gln Val Leu Glu Val Lys Met Gln Val Glu Tyr Met
385                   390                   395                   400
Ser Phe Ser Ala His Ala Asp Ala Lys Gly Ile Met Gln Leu Val Gly
                405                   410                   415
Gln Ala Glu Pro Glu Ser Val Leu Leu Val His Gly Glu Ala Lys Lys
                420                   425                   430
Met Glu Phe Leu Lys Gln Lys Ile Glu Gln Glu Leu Arg Val Asn Cys
```

```
              435                    440                    445
Tyr Met Pro Ala Asn Gly Glu Thr Val Thr Leu Pro Thr Ser Pro Ser
        450                    455                    460
Ile Pro Val Gly Ile Ser Leu Gly Leu Leu Lys Arg Glu Met Ala Gln
465                    470                    475                    480
Gly Leu Leu Pro Glu Ala Lys Lys Pro Arg Leu Leu His Gly Thr Leu
                485                    490                    495
Ile Met Lys Asp Ser Asn Phe Arg Leu Val Ser Ser Glu Gln Ala Leu
                500                    505                    510
Lys Glu Leu Gly Leu Ala Glu His Gln Leu Arg Phe Thr Cys Arg Val
        515                    520                    525
His Leu His Asp Thr Arg Lys Glu Gln Glu Thr Ala Leu Arg Val Tyr
        530                    535                    540
Ser His Leu Lys Ser Val Leu Lys Asp His Cys Val Gln His Leu Pro
545                    550                    555                    560
Asp Gly Ser Val Thr Val Glu Ser Val Leu Leu Gln Ala Ala Ala Pro
                565                    570                    575
Ser Glu Asp Pro Gly Thr Lys Val Leu Leu Val Ser Trp Thr Tyr Gln
                580                    585                    590
Asp Glu Glu Leu Gly Ser Phe Leu Thr Ser Leu Leu Lys Lys Gly Leu
        595                    600                    605
Pro Gln Ala Pro Ser
        610
```

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<210> 4267
<211> 2230
<212> DNA
<213> Homo sapiens

<400> 4267
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120
tggattaaga cagaagatgg ctggaagaga tgtgaatctt gtagtcagaa acttgaaaga
180
gagaataacc attgtaacat cagtcacagc attatcttaa atagtgaaga tggagaaata
240
ctcaataatg aagagcatga atatgcatcc aaaaaaagga aaaaggacca ttttagaaat
300
gacacaaata ctcaaagttt ttatcatgaa aaatggatct atgtccataa agaaagcaca
360
aaagaaaggc atggctattg caccctggga gaaacctta atcggttaga cttctcaagt
420
gcaattcaag atatccgaag gttcaattat gtggtcaaac tgttgcagct aattgcaaaa
480
tcccagttaa cttcattgag tggcgtggca cagaagaatt acttcaacat tttggataaa
540
atcgttcaaa aggttcttga tgaccaccac aatcctcgct taatcaaaga tcttctgcaa
600
gacctaagct ctaccctcnt gcattcttat tagaggagta gggaagtctg tattagtggg
660
aaacatcaat atttggattt gccgattaga aactattctc gcctggcaac aacagctaca
720
```

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ggatcttcag atgactaagc aagtaacaat ggcctcaccc tcagtgacct tcctctgcac
780
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840
gtgacccccca cgttgtatat gcttagtgaa gacagacagc tgtggaagaa gctttgtcag
900
taccattttg ctgaaaagca gttttgtaga catttgatcc tttcagaaaa aggtcatatt
960
gaatggaagt tgatgtactt tgcacttcag aaacattacc cagcgaagga gcagtacgga
1020
gacacactgc atttctgtcg gcactgcagc attctctttt ggaaggactc aggacacccc
1080
tgcacgcggc cgaccctgac agctgcttca cgcgtgtctc cgcagcactt catcgacctc
1140
ttcaagtttt aagggctgcc cctgccatcc ctattggaga ttgtgaatcc tgctgtctgt
1200
gcagggctca tagtgagtgt tctgtgaggt gggtggagac tcctcggaag cccctgcttc
1260
cagaaagcct gggaagaact gcccttctgc aaagggggga ctgcatggtt gcattttcat
1320
cactgaaagt cagaggccaa ggaaatcatt·tctacttctt taaaaactcc ttctaagcat
1380
attaaaatgt gaaattttgc gtactctctc tctctatata tatagttcaa aaatacttta
1440
ggtggtcagc tccacattct ttgttgacgt gacactaacg gccaataata tgcttcttaa
1500
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1560
tccttgtaaa tacattgtac agaatattta ttttttctca aaatgcattt taactactac
1620
attggctgtg ccaaatgagt cctctttgaa tagaaagtga acccagggca atgacagcca
1680
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1740
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1860
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1920
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1980
cttaaaagat tgcttcgttt ttaaaataac gcatgtccat tttagaaaat tagaaaatca
2040
gtcccaccac ccaaagatta ttgtgcatgc tgaaaagagt atgaaaaatc ccctcagcag
2100
gcataggata gaaacgtatt gttgtatatt ccatttttg aatagggtca aggagcctaa
2160
gcaaatcatt tctacttttt cctttaagca taataataaa agtatacttt tatggcgtta
2220
taaaacaaca
2230
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<210> 4268

<211> 210
<212> PRT
<213> Homo sapiens

<400> 4268
Ala Gly Ala Pro Val Gly His Trp Gly Thr Arg Ala Arg Gln Val Lys
1   5   10   15
Thr Gly Gly Cys Arg Arg Ala Arg Arg Thr Met Pro Phe Leu Gly Gln
            20   25   30
Asp Trp Arg Ser Pro Gly Trp Ser Trp Ile Lys Thr Glu Asp Gly Trp
            35   40   45
Lys Arg Cys Glu Ser Cys Ser Gln Lys Leu Glu Arg Glu Asn Asn His
        50   55   60
Cys Asn Ile Ser His Ser Ile Ile Leu Asn Ser Glu Asp Gly Glu Ile
65   70   75   80
Leu Asn Asn Glu Glu His Glu Tyr Ala Ser Lys Lys Arg Lys Lys Asp
                85   90   95
His Phe Arg Asn Asp Thr Asn Thr Gln Ser Phe Tyr His Glu Lys Trp
            100   105   110
Ile Tyr Val His Lys Glu Ser Thr Lys Glu Arg His Gly Tyr Cys Thr
        115   120   .   125
Leu Gly Glu Thr Phe Asn Arg Leu Asp Phe Ser Ser Ala Ile Gln Asp
        130   135   140
Ile Arg Arg Phe Asn Tyr Val Val Lys Leu Leu Gln Leu Ile Ala Lys
145   150   155   160
Ser Gln Leu Thr Ser Leu Ser Gly Val Ala Gln Lys Asn Tyr Phe Asn
                165   170   175
Ile Leu Asp Lys Ile Val Gln Lys Val Leu Asp Asp His His Asn Pro
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<212> PRT
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Gln Arg Gly Arg Val Leu Pro Pro Pro Ala Pro Leu Asp Thr Thr Asn
            35   40   45
Leu Ala Gly Arg Arg Thr Leu Gln Gly Arg Ala Lys Met Ala Ser Val
        50   55   60
Pro Val Tyr Cys Leu Cys Arg Leu Pro Tyr Asp Val Thr Arg Phe Met
65   70   75   80
Ile Glu Cys Asp Met Cys Gln Asp Trp Phe His Gly Ser Cys Val Gly
                85   90   95
Val Glu Glu Glu Lys Ala Ala Asp Ile Asp Leu Tyr His Cys Pro Asn
                100   105   110
Cys Glu Val Leu His Gly Pro Ser Ile Met Lys Lys Arg Arg Gly Ser
            115   120   125
Ser Lys Gly His Asp Thr His Lys Gly Lys Pro Val Lys Thr Gly Ser
        130   135   140
Pro Thr Phe Val Arg Glu Leu Arg Ser Arg Thr Phe Asp Ser Ser Asp
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Glu Val Ile Leu Lys Pro Thr Gly Asn Gln Leu Thr Val Glu Phe Leu
                165   170   175
Glu Glu Asn Ser Phe Ser Val Pro Ile Leu Val Leu Lys Lys Asp Gly
                180   185   190
Leu Gly Met Thr Leu Pro Ser Pro Ser Phe Thr Val Arg Asp Val Glu
        195   200   205
His Tyr Val Gly Ser Asp Lys Glu Ile Asp Val Ile Asp Val Thr Arg
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Gln Ala Asp Cys Lys Met Lys Leu Gly Asp Phe Val Lys Tyr Tyr Tyr
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Ser Gly Lys Arg Glu Lys Val Leu Asn Val Ile Ser Leu Glu Phe Ser

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Asp Thr Arg Leu Ser Asn Leu Val Glu Thr Pro Lys Ile Val Arg Lys
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Pro Asn Val Gln Lys Tyr Cys Leu Met Ser Val Arg Asp Ser Tyr Thr
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Asp Phe His Ile Asp Phe Gly Gly Thr Ser Val Trp Tyr His Val Leu
305                    310                    315                    320
Lys Gly Glu Lys Ile Phe Tyr Leu Ile Arg Pro Thr Asn Ala Asn Leu
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Thr Leu Phe Glu Cys Trp Ser Ser Ser Ser Asn Gln Asn Glu Met Phe
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Phe Gly Asp Gln Val Asp Lys Cys Tyr Lys Cys Ser Val Lys Gln Gly
            355                    360                    365
Gln Thr Leu Phe Ile Pro Thr Gly Trp Ile His Ala Val Leu Thr Pro
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Val Asp Cys Leu Ala Phe Gly Gly Asn Phe Leu His Ser Leu Asn Ile
385                    390                    395                    400
Glu Met Gln Leu Lys Ala Tyr Glu Ile Glu Lys Arg Leu Ser Thr Ala
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Asp Leu Phe Arg Phe Pro Asn Phe Glu Thr Ile Cys Trp Tyr Val Gly
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Lys His Ile Leu Asp Ile Phe Arg Gly Leu Arg Glu Asn Arg Arg His
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Pro Ala Ser Tyr Leu Val His Gly Gly Lys Ala Leu Asn Leu Ala Phe
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Arg Ala Trp Thr Arg Lys Glu Ala Leu Pro Asp His Glu Asp Glu Ile
465                    470                    475                    480
Pro Glu Thr Val Arg Thr Val Gln Leu Ile Lys Asp Leu Ala Arg Glu
            485                    490                    495
Ile Arg Leu Val Glu Asp Ile Phe Gln Gln Asn Val Gly Lys Thr Ser
            500                    505                    510
Asn Ile Phe Gly Leu Gln Arg Ile Phe Pro Ala Gly Ser Ile Pro Leu
            515                    520                    525
Thr Arg Pro Ala His Ser Thr Ser Val Ser Met Ser Arg Leu Ser Leu
            530                    535                    540
Pro Ser Lys Asn Gly Ser Lys Lys Lys Gly Leu Lys Pro Lys Glu Leu
545                    550                    555                    560
Phe Lys Lys Ala Glu Arg Lys Gly Lys Glu Ser Ser Ala Leu Gly Pro
            565                    570                    575
Ala Gly Gln Leu Ser Tyr Asn Leu Met Asp Thr Tyr Ser His Gln Ala
            580                    585                    590
Leu Lys Thr Gly Ser Phe Gln Lys Ala Lys Phe Asn Ile Thr Gly Ala
            595                    600                    605
Cys Leu Asn Asp Ser Asp Asp Asp Ser Pro Asp Leu Asp Leu Asp Gly
610                    615                    620
Asn Glu Ser Pro Leu Ala Leu Leu Met Ser Asn Gly Ser Thr Lys Arg
625                    630                    635                    640
Val Lys Ser Leu Ser Lys Ser Arg Arg Thr Lys Ile Ala Lys Lys Val
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Asp Lys Ala Arg Leu Met Ala Glu Gln Val Met Glu Asp Glu Phe Asp
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Leu Asp Ser Asp Asp Glu Leu Gln Ile Asp Glu Arg Leu Gly Lys Glu
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Glu Phe Asp Ile Glu Glu Asp Tyr Thr Thr Asp Glu Asp Met Val Glu
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Gly Val Glu Gly Lys Leu Gly Asn Gly Ser Gly Ala Gly Gly Ile Leu
                   740                    745                    750
Asp Leu Leu Lys Ala Ser Arg Gln Val Gly Gly Pro Asp Tyr Ala Ala
                   755                    760                    765
Leu Thr Glu Ala Pro Ala Ser Pro Ser Thr Gln Glu Ala Ile Gln Gly
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Met Leu Cys Met Ala Asn Leu Gln Ser Ser Ser Ser Ser Pro Ala Thr
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Ser Ser Leu Gln Ala Trp Trp Thr Gly Gly Gln Asp Arg Ser Ser Gly
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Arg Thr Pro Gly Lys Arg Pro Ile Lys Arg Pro Ala Tyr Trp Arg Thr
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Glu Ser Glu Glu Glu Glu Glu Asn Ala Ser Leu Asp Glu Gln Asp Ser
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Leu Gly Ala Cys Phe Lys Asp Ala Glu Tyr Ile Tyr Pro Ser Leu Glu
865                    870                    875                    880
Ser Asp Asp Asp Asp Pro Ala Leu Lys Ser Arg Pro Lys Lys Lys Lys
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Asn Ser Asp Asp Ala Pro Trp Ser Pro Lys Ala Arg Val Thr Pro Thr
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Ile Glu Thr Gly Leu Ala Ala Ala Ala Ala Lys Leu Ala Gln Gln Glu
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Leu Gln Lys Ala Gln Lys Lys Lys Tyr Ile Lys Lys Lys Pro Leu Leu
945                    950                    955                    960
Lys Glu Val Glu Gln Pro Arg Pro Gln Asp Ser Asn Leu Ser Leu Thr
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Val Pro Ala Pro Thr Val Ala Ala Thr Pro Gln Leu Val Thr Ser Ser
                   980                    985                    990
Ser Pro Leu Pro Pro Pro Glu Pro Lys Gln Glu Ala Leu Ser Gly Ser
    995                    1000                   1005
Leu Ala Asp His Glu Tyr Thr Ala Arg Pro Asn Ala Phe Gly Met Ala
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Gln Ala Asn Arg Ser Thr Thr Pro Met Ala Pro Gly Val Phe Leu Thr
1025                   1030                   1035                   1040
Gln Arg Arg Pro Ser Val Gly Ser Gln Ser Asn Gln Ala Gly Gln Gly
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Lys Arg Pro Lys Lys Gly Leu Ala Thr Ala Lys Gln Arg Leu Gly Arg
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<210> DNA
<213> Homo sapiens

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Asn Asn Phe Ser Glu Leu Phe His Leu Leu Ser Ser Arg Asn Cys Lys
            35   40   45
Thr Arg Asn Leu Val Met Lys Leu Leu Leu Asn Met Ser Glu Asn Pro
        50   55   60
Thr Ala Ala Arg Asp Met Ile Asn Met Lys Ala Leu Ala Ala Leu Lys
65   70   75   80
Leu Ile Phe Asn His Lys Glu Ala Lys Ala Asn Leu Val Ser Gly Val
                85   90   95
Ala Ile Phe Ile Asn Ile Lys Glu His Ile Arg Lys Gly Ser Ile Val
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Val Asn Lys Tyr Gly His Thr Thr Asn Lys Ile Gly Phe Cys Leu Phe
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Leu Val Lys Asp Glu Phe
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2081

<210> 4274
<211> 235
<212> PRT
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<400> 4274
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Glu Glu Ser Ile Arg Ala His Val Met Ala Ser His His Ser Lys Arg
        35   40   45
Arg Gly Arg Ala Ser Ser Glu Ser Gln Gly Leu Gly Ala Gly Val Arg
    50   55   60
Thr Glu Xaa Asp Val Glu Glu Glu Ala Leu Arg Arg Lys Leu Glu Glu
65   70   75   80
Leu Thr Ser Asn Val Ser Asp Gln Glu Thr Phe Val Arg Gly Gly Gly
                85   90   95
Ser Gln Gly Arg Lys Cys Arg Ala Gln Gln Gly Gln Ile Ser Trp Ala
            100   105   110
Ser Pro Pro Gly Gly Pro Gly Arg Trp His Gly Cys Pro Ser Asn Gln
        115   120   125
Gln Thr Gly Lys Lys Pro Gln Asp Pro Gly Asp Pro Val Gln Tyr Asn
    130   135   140
Arg Thr Thr Asp Glu Glu Leu Ser Glu Leu Glu Asp Arg Val Ala Val
145   150   155   160
Thr Ala Ser Glu Val Gln Gln Ala Glu Ser Glu Val Ser Asp Ile Glu
                165   170   175
Ser Arg Ile Ala Ala Leu Arg Ala Ala Gly Leu Thr Val Lys Pro Ser
            180   185   190
Gly Lys Pro Arg Arg Lys Ser Asn Leu Pro Ile Phe Leu Pro Arg Val
        195   200   205
Ala Gly Lys Leu Gly Lys Arg Pro Glu Asp Pro Asn Ala Asp Pro Ser
    210   215   220
Ser Glu Ala Lys Ala Met Ala Val Pro Ile Phe

225   230   235

<210> 4275
<211> 874
<212> DNA
<213> Homo sapiens

<400> 4275
atgcaggtgg ccctgggtgc acatctacga gatgccaggc gcgggcagag gctccgctca
60
ggggcgcacg tagtggtcac tggacccccc aatgcgggca agagcagcct agtgaacctg
120
ctcagtcgga agcctgtgtc catcgtgtcc ccggagccag ggaccacccg tgacgtgctg
180
gagaccccag tcgacctggc cggatttcct gtgctgctga gcgacacggc tgggttgcgg
240
gagggcgtgg ggcccgtgga gcaggagggc gtgcggcgcg cccgggagag gctagagcag
300
gctgacctca ttctggccat gctggatgct tctgacctgg cctctccctc cagttgcaac
360
ttcctggcca ccgtcgtagc ctctgtggga gcccagagcc ccagtgacag cagccagcgc
420
ctcctcctgg tgctgaacaa gtcggacctg ctgtccccgg agggcccagg tcccggtcct
480
gacctgcccc cgcacctgct gctgtcctgt ctgacgggag aggggctgga cggcctcctg
540
gaggcgctga ggaaggagct agctgcagtg tgtggggacc cgtccacaga tcccccgctg
600
ctgacccgag caaggcacca gcaccacctc cagggttgcc tggatgccct cggccactac
660
aagcagtcaa aagacctggc cctggcggca gaggcgctgc gggtggcccg gggtcacctg
720
acccggctca caggtggagg gggtaccgag gagatcctgg acatcatctt ccaggacttc
780
tgtgtgggca agtgacggga tccagggaat tcgcacccaa gctgcgtgga gacccaggag
840
cctcggggga tctggaaaca gtttaggcca attg
874

<210> 4276
<211> 264
<212> PRT
<213> Homo sapiens

<400> 4276
Met Gln Val Ala Leu Gly Ala His Leu Arg Asp Ala Arg Arg Gly Gln
1   5   10   15
Arg Leu Arg Ser Gly Ala His Val Val Val Thr Gly Pro Pro Asn Ala
            20   25   30
Gly Lys Ser Ser Leu Val Asn Leu Leu Ser Arg Lys Pro Val Ser Ile
        35   40   45
Val Ser Pro Glu Pro Gly Thr Thr Arg Asp Val Leu Glu Thr Pro Val
    50   55   60
Asp Leu Ala Gly Phe Pro Val Leu Leu Ser Asp Thr Ala Gly Leu Arg

                                   3480

```
65                    70                    75                    80
Glu Gly Val Gly Pro Val Glu Gln Glu Gly Val Arg Arg Ala Arg Glu
                     85                    90                    95
Arg Leu Glu Gln Ala Asp Leu Ile Leu Ala Met Leu Asp Ala Ser Asp
               100                   105                   110
Leu Ala Ser Pro Ser Ser Cys Asn Phe Leu Ala Thr Val Val Ala Ser
               115                   120                   125
Val Gly Ala Gln Ser Pro Ser Asp Ser Ser Gln Arg Leu Leu Leu Val
           130                   135                   140
Leu Asn Lys Ser Asp Leu Leu Ser Pro Glu Gly Pro Gly Pro Gly Pro
145                   150                   155                   160
Asp Leu Pro Pro His Leu Leu Leu Ser Cys Leu Thr Gly Glu Gly Leu
               165                   170                   175
Asp Gly Leu Leu Glu Ala Leu Arg Lys Glu Leu Ala Ala Val Cys Gly
               180                   185                   190
Asp Pro Ser Thr Asp Pro Pro Leu Leu Thr Arg Ala Arg His Gln His
           195                   200                   205
His Leu Gln Gly Cys Leu Asp Ala Leu Gly His Tyr Lys Gln Ser Lys
       210                   215                   220
Asp Leu Ala Leu Ala Ala Glu Ala Leu Arg Val Ala Arg Gly His Leu
225                   230                   235                   240
Thr Arg Leu Thr Gly Gly Gly Thr Glu Glu Ile Leu Asp Ile Ile
               245                   250                   255
Phe Gln Asp Phe Cys Val Gly Lys
               260
```

```
<210> 4277
<211> 1070
<212> DNA
<213> Homo sapiens

<400> 4277
cggccggtcg ggcctccttt tgttttagga agggcacttc actccccggg cccccacctg
60
cccgcctgcg ccgccccttt ccgcgggtcc ggagttggcg gggccctgcg ccggaggagg
120
aggaccaggc ccgcgggctc agctctcgcc gccagcgggc cgcagcattt ttgaaacgtt
180
ggggttgttg gagtggttgg attttccctg gaattgagtg agaaattcag aagactgaag
240
cccaggctta ctgtctacct ttcacggagg cctagccgtg agaggacaga agaaggcacg
300
tggcgaatca tgacagcgga caaagacaaa gacaaagaca aagagaagga ccgggaccga
360
gaccgggacc gagagagaga gaaaagagac aaagcaagag agagtgagaa ttcaaggcca
420
cgccggagct gtaccttgga aggaggagcc aaaaattatg ctgagagtga tcacagtgaa
480
gacgaggaca atgacaacaa tagtgccacc gcagaggagt ccacgaagaa gaataagaag
540
aaaccaccga aaaaaaagtc tcgttatgaa aggacagata ccggtgagat aacatcctac
600
atcactgaag atgatgtggt ctacagacca ggagactgtg tgtatatcga gagtcggagg
660
```

```
ccaaacacac cgtatttcat ctgtagcatt caagacttca aactggtcca caactcccag
720
gcctgttgca gatctccaac tcctgctttg tgtgacccc cagcatgctc tctgccggtg
780
gcatcacagc caccacagca tctttctgaa gccgggagag ggcctgtagg gagtaagagg
840
gaccatctcc tcatgaacgt caaatggtac taccgtcaat ctgaggttcc agattctgtg
900
tatcagcatt tggttcagga tcgacataat gaaaatgact ctggaagaga acttgtcatt
960
acagacccag ttatcaagaa ccgagagctc ttcatttctg attacgttga cacttaccat
1020
gctgctgccc ttagagggaa gtgtaacatt ctccattttt ctgacatatt
1070
```

<210> 4278
<211> 253
<212> PRT
<213> Homo sapiens

<400> 4278

```
Met Thr Ala Asp Lys Asp Lys Asp Lys Asp Lys Glu Lys Asp Arg Asp
 1               5                  10                  15
Arg Asp Arg Asp Arg Glu Arg Glu Lys Arg Asp Lys Ala Arg Glu Ser
            20                  25                  30
Glu Asn Ser Arg Pro Arg Arg Ser Cys Thr Leu Glu Gly Gly Ala Lys
        35                  40                  45
Asn Tyr Ala Glu Ser Asp His Ser Glu Asp Glu Asp Asn Asp Asn Asn
    50                  55                  60
Ser Ala Thr Ala Glu Glu Ser Thr Lys Lys Asn Lys Lys Lys Pro Pro
65                  70                  75                  80
Lys Lys Lys Ser Arg Tyr Glu Arg Thr Asp Thr Gly Glu Ile Thr Ser
                85                  90                  95
Tyr Ile Thr Glu Asp Asp Val Val Tyr Arg Pro Gly Asp Cys Val Tyr
            100                 105                 110
Ile Glu Ser Arg Arg Pro Asn Thr Pro Tyr Phe Ile Cys Ser Ile Gln
            115                 120                 125
Asp Phe Lys Leu Val His Asn Ser Gln Ala Cys Cys Arg Ser Pro Thr
    130                 135                 140
Pro Ala Leu Cys Asp Pro Pro Ala Cys Ser Leu Pro Val Ala Ser Gln
145                 150                 155                 160
Pro Pro Gln His Leu Ser Glu Ala Gly Arg Gly Pro Val Gly Ser Lys
                165                 170                 175
Arg Asp His Leu Leu Met Asn Val Lys Trp Tyr Tyr Arg Gln Ser Glu
            180                 185                 190
Val Pro Asp Ser Val Tyr Gln His Leu Val Gln Asp Arg His Asn Glu
        195                 200                 205
Asn Asp Ser Gly Arg Glu Leu Val Ile Thr Asp Pro Val Ile Lys Asn
    210                 215                 220
Arg Glu Leu Phe Ile Ser Asp Tyr Val Asp Thr Tyr His Ala Ala Ala
225                 230                 235                 240
Leu Arg Gly Lys Cys Asn Ile Leu His Phe Ser Asp Ile
                245                 250
```

<210> 4279
<211> 1963
<212> DNA
<213> Homo sapiens

<400> 4279
cggccgctta cggaaaactc gctgttggaa gttctggatg gcacagtcat gatgtacagt
60
ctgagcgtac accagcagct gggcaagatg gtgggtgtgt ctgatgatgt caacgagtat
120
gcaatggccc tgagagacac cgaggacaag ctacgtcggt gccccaagag gaggaaggac
180
atccttgcag agttgaccaa gagccagaag gttttctcag aaaagctgga ccacctgagc
240
cgccgtcttg cctgggtcca tgccactgtc tactcccagg agaagatgct ggacatctac
300
tggctgctgc gcgtctgcct gcggaccatt gagcacggtg atcgcacagg gtctctcttt
360
gccttcatgc ccgagttcta cctgagcgtg gccatcaaca gctacagtgc tctcaagaat
420
tactttggtc ccgtgcacag catggaggag ctcccaggct atgaagagac cctgacccgc
480
ctggctgcca ttctcgccaa acactttgcc gacgcacgca ttgtgggcac tgacatccga
540
gactcactga tgcaggccct ggccagctac gtgtgctacc cacactccct gcgggctgtg
600ccgaggagca gcgtatcgcc atggtgagga acctcctggc gccctatgag   660
cagcggccct gggcccagac caactggatc ctggtgcggc tctggagggg ctgtggcttc
720
gggtaccgct atacacggct gccacatctg ctgaaaacca aacttgagga cgccaatttg
780
cccagcctcc agaagccctg cccttccacc ctgctgcagc agcacatggc ggacctccta
840
cagcagggtc ctgatgtggc acccagcttc ctcaacagcg tcctcaatca gctcaactgg
900
gccttctctg aattcattgg catgatccaa gagatccagc aggctgctga gcgcctggag
960
cggaactttg tggacagccg gcagctcaag gtatgtgcca cctgctttga cctctcggtc
1020
agcctgctgc gtgtcttgga gatgactatc acactggtgc ctgagatatt ccttgactgg
1080
acccggccta cctctgagat gctgctgcgg cgtcttgcac agctgctaaa ccaggtgctg
1140
aaccgggtga cagctgagag gaacctgttt gatcgtgtgg tcaccctacg gctgcctggc
1200
ctagagagcg tggaccacta tcccattctg gtggcagtga cgggcatcct ggtgcagctc
1260
ctggtgcgtg gcccagcctc agagagagag caagccacat cagtgctcct ggcagatccc
1320
tgcttccagc tacgctcaat atgctatctc ctgggacagc cagagccccc agcacctggc
1380
actgctctgc cagcccctga ccggaagcgc ttctccctgc agagctatgc ggattatatc
1440
agtgccgatg agctggccca gtggaacag atgctggcgc acctgacctc tgcatctgcc
1500

```
caggcagcag ctgcctccct gcccaccagt gaggaggacc tctgccccat ctgctatgcc
1560
caccccatct ctgctgtgtt ccagccctgt ggccacaagt cctgcaaagc ctgtatcaac
1620
cagcacctga tgaacaacaa ggactgcttc ttctgcaaaa ccaccatcgt gtctgtagag
1680
gactgggaga agggagccaa tacgagtact acctcctcag ctgcctagcc ctcacagcct
1740
gtgccatcct ggaacctcca cctttgaacc cagagccagg ctgggcccta tttatgagct
1800
cccttttgccc ttctcctgta tcccacacca ccacatccaa cctccttgcc tgcctgtatc
1860
ctcattggtg ggagcccagc catggcccta attgtgcctg agcttgactt tcagtcaggg
1920
ccacagtgag cattaaatta ttattccata caaaaaaaaa aaa
1963
```

<210> 4280
<211> 575
<212> PRT
<213> Homo sapiens

<400> 4280
```
Arg Pro Leu Thr Glu Asn Ser Leu Leu Glu Val Leu Asp Gly Thr Val
1               5                   10                  15
Met Met Tyr Ser Leu Ser Val His Gln Gln Leu Gly Lys Met Val Gly
            20                  25                  30
Val Ser Asp Asp Val Asn Glu Tyr Ala Met Ala Leu Arg Asp Thr Glu
        35                  40                  45
Asp Lys Leu Arg Arg Cys Pro Lys Arg Arg Lys Asp Ile Leu Ala Glu
    50                  55                  60
Leu Thr Lys Ser Gln Lys Val Phe Ser Glu Lys Leu Asp His Leu Ser
65                  70                  75                  80
Arg Arg Leu Ala Trp Val His Ala Thr Val Tyr Ser Gln Glu Lys Met
                85                  90                  95
Leu Asp Ile Tyr Trp Leu Leu Arg Val Cys Leu Arg Thr Ile Glu His
            100                 105                 110
Gly Asp Arg Thr Gly Ser Leu Phe Ala Phe Met Pro Glu Phe Tyr Leu
            115                 120                 125
Ser Val Ala Ile Asn Ser Tyr Ser Ala Leu Lys Asn Tyr Phe Gly Pro
        130                 135                 140
Val His Ser Met Glu Glu Leu Pro Gly Tyr Glu Glu Thr Leu Thr Arg
145                 150                 155                 160
Leu Ala Ala Ile Leu Ala Lys His Phe Ala Asp Ala Arg Ile Val Gly
                165                 170                 175
Thr Asp Ile Arg Asp Ser Leu Met Gln Ala Leu Ala Ser Tyr Val Cys
            180                 185                 190
Tyr Pro His Ser Leu Arg Ala Val Glu Arg Ile Pro Glu Glu Gln Arg
            195                 200                 205
Ile Ala Met Val Arg Asn Leu Leu Ala Pro Tyr Glu Gln Arg Pro Trp
        210                 215                 220
Ala Gln Thr Asn Trp Ile Leu Val Arg Leu Trp Arg Gly Cys Gly Phe
225                 230                 235                 240
Gly Tyr Arg Tyr Thr Arg Leu Pro His Leu Leu Lys Thr Lys Leu Glu
```

```
                    245                   250                   255
Asp Ala Asn Leu Pro Ser Leu Gln Lys Pro Cys Pro Ser Thr Leu Leu
            260                   265                   270
Gln Gln His Met Ala Asp Leu Leu Gln Gln Gly Pro Asp Val Ala Pro
            275                   280                   285
Ser Phe Leu Asn Ser Val Leu Asn Gln Leu Asn Trp Ala Phe Ser Glu
        290                   295                   300
Phe Ile Gly Met Ile Gln Glu Ile Gln Gln Ala Ala Glu Arg Leu Glu
305                   310                   315                   320
Arg Asn Phe Val Asp Ser Arg Gln Leu Lys Val Cys Ala Thr Cys Phe
                325                   330                   335
Asp Leu Ser Val Ser Leu Leu Arg Val Leu Glu Met Thr Ile Thr Leu
            340                   345                   350
Val Pro Glu Ile Phe Leu Asp Trp Thr Arg Pro Thr Ser Glu Met Leu
            355                   360                   365
Leu Arg Arg Leu Ala Gln Leu Leu Asn Gln Val Leu Asn Arg Val Thr
        370                   375                   380
Ala Glu Arg Asn Leu Phe Asp Arg Val Val Thr Leu Arg Leu Pro Gly
385                   390                   395                   400
Leu Glu Ser Val Asp His Tyr Pro Ile Leu Val Ala Val Thr Gly Ile
                405                   410                   415
Leu Val Gln Leu Leu Val Arg Gly Pro Ala Ser Glu Arg Glu Gln Ala
            420                   425                   430
Thr Ser Val Leu Leu Ala Asp Pro Cys Phe Gln Leu Arg Ser Ile Cys
            435                   440                   445
Tyr Leu Leu Gly Gln Pro Glu Pro Pro Ala Pro Gly Thr Ala Leu Pro
        450                   455                   460
Ala Pro Asp Arg Lys Arg Phe Ser Leu Gln Ser Tyr Ala Asp Tyr Ile
465                   470                   475                   480
Ser Ala Asp Glu Leu Ala Gln Val Glu Gln Met Leu Ala His Leu Thr
                485                   490                   495
Ser Ala Ser Ala Gln Ala Ala Ala Ala Ser Leu Pro Thr Ser Glu Glu
            500                   505                   510
Asp Leu Cys Pro Ile Cys Tyr Ala His Pro Ile Ser Ala Val Phe Gln
            515                   520                   525
Pro Cys Gly His Lys Ser Cys Lys Ala Cys Ile Asn Gln His Leu Met
        530                   535                   540
Asn Asn Lys Asp Cys Phe Phe Cys Lys Thr Thr Ile Val Ser Val Glu
545                   550                   555                   560
Asp Trp Glu Lys Gly Ala Asn Thr Ser Thr Thr Ser Ser Ala Ala
                565                   570                   575
```

<210> 4281
<211> 507
<212> DNA
<213> Homo sapiens

<400> 4281
acgcgtgaag ggacagagct ggggccttgt caggagcccc acagttggcc aatgggccag
60
atgccccata gtctcagccc acctctcttc tgccatgagt cccctgattc tgtcctttga
120
gctgactctg agaggcagtg ggcttcccgc cagcacctcc ccctatcaca tttgtagggc
180

tggtttatga ggccggaagt aagcaagcac cccctcatat caacctggca cttcacaccc
240
cccatggtta tcagtggggg tgctggctgg ctggcaggca gccagagaca tttcagcagg
300
tcaggcatgg atgcaggtgg aaatgagaga ggatcagtga gcgcattcat gtctttttgag
360
tggtctacag atgagtggtc tccagtctca aatgaggaga acaaataggg aagtaggagc
420
tcagggttct tgtgtgtctc ataggcagct gcctatccct gggtgataca gctccctggc
480
acacccattc ccaagggcac aggatcc
507

<210> 4282
<211> 106
<212> PRT
<213> Homo sapiens

<400> 4282
Met Asn Ala Leu Thr Asp Pro Leu Ser Phe Pro Pro Ala Ser Met Pro
1   5   10   15
Asp Leu Leu Lys Cys Leu Trp Leu Pro Ala Ser Gln Pro Ala Pro Pro
            20   25   30
Leu Ile Thr Met Gly Gly Val Lys Cys Gln Val Asp Met Arg Gly Cys
        35   40   45
Leu Leu Thr Ser Gly Leu Ile Asn Gln Pro Tyr Lys Cys Asp Arg Gly
    50   55   60
Arg Cys Trp Arg Glu Ala His Cys Leu Ser Glu Ser Ala Gln Arg Thr
65   70   75   80
Glu Ser Gly Asp Ser Trp Gln Lys Arg Gly Gly Leu Arg Leu Trp Gly
                85   90   95
Ile Trp Pro Ile Gly Gln Leu Trp Gly Ser
                100   105

<210> 4283
<211> 315
<212> DNA
<213> Homo sapiens

<400> 4283
gaattctcaa ccagaacagc ccagcaggaa aggagccggc atggggtgcc cctctgcagc
60
cgaccgtttt cctagaaggc ctaaccgctc aaacgggcag gggaggggg cgggcggccc
120
gggagaaacc gagtccccgc cgggtcccca ccgtgtggcg ccgaccgaaa taactccagt
180
ccagctgcaa aaaccctccc gaaaacccaa gcttgtccgg cacaacttcg gtctctccag
240
cctcattcct gcccgcactc cgccaaactg ctcgccctgc ccagcgcagc ggatgcagcg
300
ctcccggccc nacgg
315

<210> 4284

```
<211> 91
<212> PRT
<213> Homo sapiens

<400> 4284
Met Gly Cys Pro Ser Ala Ala Asp Arg Phe Pro Arg Arg Pro Asn Arg
1               5                   10                  15
Ser Asn Gly Gln Gly Arg Gly Ala Gly Gly Pro Gly Glu Thr Glu Ser
            20                  25                  30
Pro Pro Gly Pro His Arg Val Ala Pro Thr Glu Ile Thr Pro Val Gln
            35                  40                  45
Leu Gln Lys Pro Ser Arg Lys Pro Lys Leu Val Arg His Asn Phe Gly
        50                  55                  60
Leu Ser Ser Leu Ile Pro Ala Arg Thr Pro Pro Asn Cys Ser Pro Cys
65                  70                  75                  80
Pro Ala Gln Arg Met Gln Arg Ser Arg Pro Xaa
                85                  90

<210> 4285
<211> 591
<212> DNA
<213> Homo sapiens

<400> 4285
nagatctcag agaacttggt gaacattcag aaaatgcaga aaacgcaggt gaaatgccgc
60
aaaatcctga ccaagatgaa gcagcagggt catgagacag ccgcctgtcc ggagactgaa
120
gagataccgc agggagccag tggctgctgg aaggatgacc tccagaagga actgagtgat
180
atatggtgat gcccagcctg cagtctgacc cctgaccctc ctctgaaccc gttcccccaa
240
cgggatctgg cagtgaccac cagaacctgg agcccacctg agtccagact tccctcaccc
300
cctaggactc accccaccac ggcccccaac cttagctgta ctgctgtcta caccctgagc
360
agtgtggagt ctcccagcgc ccccagctcc ttgtcttctt gcaggtctgc tgtgcacgtg
420
ctgcaggact ccatagacag cctcactttg tgctcggggg cctgtcccaa ggcctcgagc
480
ctaagaggcc acaagggcac cagtgcctga gccctccact ccctcctgg gactctgact
540
ccgactgtga ccaggacctc tcccagccac ctttcagcaa gagcggccgc a
591

<210> 4286
<211> 106
<212> PRT
<213> Homo sapiens

<400> 4286
Cys Pro Ala Cys Ser Leu Thr Pro Asp Pro Pro Leu Asn Pro Phe Pro
1               5                   10                  15
Gln Arg Asp Leu Ala Val Thr Thr Arg Thr Trp Ser Pro Pro Glu Ser
```

```
              20                 25                 30
Arg Leu Pro Ser Pro Pro Arg Thr His Pro Thr Thr Ala Pro Asn Leu
        35                 40                 45
Ser Cys Thr Ala Val Tyr Thr Leu Ser Ser Val Glu Ser Pro Ser Ala
    50                 55                 60
Pro Ser Ser Leu Ser Ser Cys Arg Ser Ala Val His Val Leu Gln Asp
65                 70                 75                 80
Ser Ile Asp Ser Leu Thr Leu Cys Ser Gly Ala Cys Pro Lys Ala Ser
                85                 90                 95
Ser Leu Arg Gly His Lys Gly Thr Ser Ala
              100                105
```

<210> 4287
<211> 868
<212> DNA
<213> Homo sapiens

<400> 4287
cgagggcgcg actgcggggt tcctggtgct gaggacggac gccattggag ttcccgagaa
60
ggctgagctc tcatctccct gggacccgca gcatggctga gggaagcttc agcgtgcaat
120
cggaaagcta cagtgttgaa gacatggatg agggtagcga cgaagtcggg gaggaagaga
180
tggttgaagg caacgactat gaagaattcg gtgcgtttgg tggctatggc accctcacca
240
gctttgacat ccatatcctc agagccttcg gaagcttggg tccaggcctt cgcatcttat
300
cgaatgagcc ctgggaactg gaaaaccnct gtgctggccc agaccctggt ggaggcattg
360
cagctggatc cggaaacact tgccaatgag acggccgccc gtgctgccaa cgtagcccgc
420
gccgccgcct ccaaccgtgc ggctcgggcc gctgccgccg ctgcccgtac cgccttcagt
480
caggtggtcg ctagccaccg ggtggccacg ccgcaggtct caggagagga tacccagccc
540
acgacctacg ccgccgaggc tcaggggccc accctgagc cacccctgc ttctccgcag
600
acctcccaga tgttagtcac cagtaagatg gctgcccccg aggctccggc aacctccgca
660
cagtcccaga caggctcccc ggcccaggag gctgctactg agggccctag tagcgcctgt
720
gcattctctc aggctccgtg tgccagggag gtggacgcca accggcccag cacagccttc
780
ctgggccaga atgatgtctt cgatttcact cagccggcag tgtcagtggc atggcttccc
840
gcgcccaaga gacctgccca gccaagag
868

<210> 4288
<211> 240
<212> PRT
<213> Homo sapiens
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<400> 4288
```
Met Arg Val Ala Thr Lys Ser Gly Arg Lys Arg Trp Leu Lys Ala Thr
1   5   10   15
Thr Met Lys Asn Ser Val Arg Leu Val Ala Met Ala Pro Ser Pro Ala
            20   25   30
Leu Thr Ser Ile Ser Ser Glu Pro Ser Glu Ala Trp Val Gln Ala Phe
        35   40   45
Ala Ser Tyr Arg Met Ser Pro Gly Asn Trp Lys Thr Xaa Val Leu Ala
        50   55   60
Gln Thr Leu Val Glu Ala Leu Gln Leu Asp Pro Glu Thr Leu Ala Asn
65   70   75   80
Glu Thr Ala Ala Arg Ala Ala Asn Val Ala Arg Ala Ala Ala Ser Asn
            85   90   95
Arg Ala Ala Arg Ala Ala Ala Ala Ala Arg Thr Ala Phe Ser Gln
            100   105   110
Val Val Ala Ser His Arg Val Ala Thr Pro Gln Val Ser Gly Glu Asp
        115   120   125
Thr Gln Pro Thr Thr Tyr Ala Ala Glu Ala Gln Gly Pro Thr Pro Glu
    130   135   140
Pro Pro Leu Ala Ser Pro Gln Thr Ser Gln Met Leu Val Thr Ser Lys
145   150   155   160
Met Ala Ala Pro Glu Ala Pro Ala Thr Ser Ala Gln Ser Gln Thr Gly
            165   170   175
Ser Pro Ala Gln Glu Ala Ala Thr Glu Gly Pro Ser Ser Ala Cys Ala
            180   185   190
Phe Ser Gln Ala Pro Cys Ala Arg Glu Val Asp Ala Asn Arg Pro Ser
        195   200   205
Thr Ala Phe Leu Gly Gln Asn Asp Val Phe Asp Phe Thr Gln Pro Ala
    210   215   220
Val Ser Val Ala Trp Leu Pro Ala Pro Lys Arg Pro Ala Gln Pro Arg
225   230   235   240
```

<210> 4289
<211> 353
<212> DNA
<213> Homo sapiens

<400> 4289
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ggatccctgg gaagatgact accctgcctg tgcgggatat gagggagaaa tatgggagcc
60
tcctcacttc aggtgtcact gctcagcata tatccaggct ttgtttttcat attggtcttg
120
caaagagcct tttgggaaca gttttcttat tgaaacatac tcagtgttta aacctgcagg
180
tgtgggttgg tggcagtcca catggcatcc tttgctctgt ccctgttctc ctgtctctgg
240
ctattcaggt tcccgtgagg atactgtcac ccttgaataa tggagcttgc ggaagaccaa
300
gcccctgttt ttggagtcct tgtgctgagg ccgctgtaac ttgcggagag ttg
353
```

<210> 4290
<211> 113
<212> PRT

<210> 4290

<213> Homo sapiens

<400> 4290
```
Met Thr Thr Leu Pro Val Arg Asp Met Arg Glu Lys Tyr Gly Ser Leu
1   5   10   15
Leu Thr Ser Gly Val Thr Ala Gln His Ile Ser Arg Leu Cys Phe His
            20   25   30
Ile Gly Leu Ala Lys Ser Leu Leu Gly Thr Val Phe Leu Leu Lys His
            35   40   45
Thr Gln Cys Leu Asn Leu Gln Val Trp Val Gly Gly Ser Pro His Gly
        50   55   60
Ile Leu Cys Ser Val Pro Val Leu Leu Ser Leu Ala Ile Gln Val Pro
65   70   75   80
Val Arg Ile Leu Ser Pro Leu Asn Asn Gly Ala Cys Gly Arg Pro Ser
                85   90   95
Pro Cys Phe Trp Ser Pro Cys Ala Glu Ala Ala Val Thr Cys Gly Glu
                100   105   110
Leu
```

<210> 4291
<211> 517
<212> DNA
<213> Homo sapiens

<400> 4291
```
nnaaatttgc caagccaaga gttaccccag gaagattctc tcttacatgg ccaattttca
60
caagcagtca ctcccctagc ccatcatcac acagattatt caaagcccac cgatatctca
120
tggagagaca cactttctca gaagtttgga tcctcagatc acttggagaa actatttaag
180
atggatgaag caagtgccca gctccttgct tataaggaaa aaggccattc tcagagttca
240
caattttcct ctgatcaaga aatagctcat ctgctgcctg aaaatgtgag tgcgctccca
300
gctacggtgg cagttgcttc tccacatacc acctcggcta ctccaaagcc cgccaccctt
360
ctacccacca atgcttcagt gacaccttct gggacttccc agccacagct ggccaccaca
420
gctccacctg taaccactgt cacttctcag cctcccacga ccctcatttc tacagttttt
480
acacgggctg tggctacact ccaagcaatg gctacaa
517
```

<210> 4292
<211> 172
<212> PRT
<213> Homo sapiens

<400> 4292
```
Xaa Asn Leu Pro Ser Gln Glu Leu Pro Gln Glu Asp Ser Leu Leu His
1   5   10   15
Gly Gln Phe Ser Gln Ala Val Thr Pro Leu Ala His His His Thr Asp
```

```
                20                    25                    30
Tyr Ser Lys Pro Thr Asp Ile Ser Trp Arg Asp Thr Leu Ser Gln Lys
        35                    40                    45
Phe Gly Ser Ser Asp His Leu Glu Lys Leu Phe Lys Met Asp Glu Ala
        50                    55                    60
Ser Ala Gln Leu Leu Ala Tyr Lys Glu Lys Gly His Ser Gln Ser Ser
65                    70                    75                    80
Gln Phe Ser Ser Asp Gln Glu Ile Ala His Leu Leu Pro Glu Asn Val
                85                    90                    95
Ser Ala Leu Pro Ala Thr Val Ala Val Ala Ser Pro His Thr Thr Ser
            100                   105                   110
Ala Thr Pro Lys Pro Ala Thr Leu Leu Pro Thr Asn Ala Ser Val Thr
        115                   120                   125
Pro Ser Gly Thr Ser Gln Pro Gln Leu Ala Thr Thr Ala Pro Pro Val
        130                   135                   140
Thr Thr Val Thr Ser Gln Pro Pro Thr Thr Leu Ile Ser Thr Val Phe
145                   150                   155                   160
Thr Arg Ala Val Ala Thr Leu Gln Ala Met Ala Thr
                165                   170
```

<210> 4293
<211> 547
<212> DNA
<213> Homo sapiens

<400> 4293
```
gccggcgccc ccggcgcgga tgcctgctct gtgcctgtat ctgagatcat cgccgttgag
60
gaaacagacg ttcacgggaa acatcaaggc agtggaaaat ggcagaaaat ggaaaagcct
120
tacgctttta cagttcactg tgtaaagaga gcacgacggc accgctggaa gtgggcgcag
180
gtgactttct ggtgtccaga ggagcagctg tgtcacttgt ggctgcagac cctgcgggag
240
atgctggaga agctgacgtc cagaccaaag catttactgg tatttatcaa cccgtttgga
300
ggaaaaggac aaggcaagcg gatatatgaa agaaagtgg caccactgtt caccttagcc
360
tccatcacca ctgacatcat cgttactgaa catgctaatc aggccaagga gactctgtat
420
gagattaaca tagacaaata cgacggcatc gtctgtgtcg gcggagatgg tatgttcagc
480
gaggtgctgc acggtctgat tgggaggacg cagaggagcg ccggggtcga ccagaaccac
540
ccccggg
547
```

<210> 4294
<211> 182
<212> PRT
<213> Homo sapiens

<400> 4294
```
Ala Gly Ala Pro Gly Ala Asp Ala Cys Ser Val Pro Val Ser Glu Ile
```

```
1                    5                      10                       15
Ile Ala Val Glu Glu Thr Asp Val His Gly Lys His Gln Gly Ser Gly
                20                      25                      30
Lys Trp Gln Lys Met Glu Lys Pro Tyr Ala Phe Thr Val His Cys Val
                35                      40                      45
Lys Arg Ala Arg Arg His Arg Trp Lys Trp Ala Gln Val Thr Phe Trp
            50                      55                      60
Cys Pro Glu Glu Gln Leu Cys His Leu Trp Leu Gln Thr Leu Arg Glu
65                      70                      75                      80
Met Leu Glu Lys Leu Thr Ser Arg Pro Lys His Leu Leu Val Phe Ile
                85                      90                      95
Asn Pro Phe Gly Gly Lys Gly Gln Gly Lys Arg Ile Tyr Glu Arg Lys
                100                     105                     110
Val Ala Pro Leu Phe Thr Leu Ala Ser Ile Thr Thr Asp Ile Ile Val
                115                     120                     125
Thr Glu His Ala Asn Gln Ala Lys Glu Thr Leu Tyr Glu Ile Asn Ile
            130                     135                     140
Asp Lys Tyr Asp Gly Ile Val Cys Val Gly Gly Asp Gly Met Phe Ser
145                     150                     155                     160
Glu Val Leu His Gly Leu Ile Gly Arg Thr Gln Arg Ser Ala Gly Val
                165                     170                     175
Asp Gln Asn His Pro Arg
                180
```

```
<210> 4295
<211> 431
<212> DNA
<213> Homo sapiens

<400> 4295
nntctagaaa atcactgtct ccttctaccc tgccatctct acaccagggt tacaaacaag   60
agcccactgc tggctccttg ttttgtaaat aagatttgtt ggactacagc tatgcccgta   120
catgtacatt ttgtgtatgg ctgcttttgt gccacaacag cagggttgag tattgcgaca   180
gagacccca ttgcccacaa gcctaaaaca tttgccatcg agccctttaa gaaagagttt    240
gctggccgtg cgcggtggcc gtggctcccg cctgtaatcc cagcactttg gaaggctgag    300
gcaggcggtg aggtctggag ttcgaaacca gcctggccag cgtggcgaaa ccctgtctcc    360
ccctcccaga ttcacgtgat tatcccacct cagcctcctg agtacctggg actataggcg    420
cgtgccaacc a                                                         431
```

```
<210> 4296
<211> 138
<212> PRT
<213> Homo sapiens

<400> 4296
Xaa Leu Glu Asn His Cys Leu Leu Leu Pro Cys His Leu Tyr Thr Arg
```

```
 1                5                     10                    15
Val Thr Asn Lys Ser Pro Leu Leu Ala Pro Cys Phe Val Asn Lys Ile
            20                    25                    30
Cys Trp Thr Thr Ala Met Pro Val His Val His Phe Val Tyr Gly Cys
            35                    40                    45
Phe Cys Ala Thr Thr Ala Gly Leu Ser Ile Ala Thr Glu Thr Pro Ile
    50                    55                    60
Ala His Lys Pro Lys Thr Phe Ala Ile Glu Pro Phe Lys Lys Glu Phe
65                    70                    75                    80
Ala Gly Arg Ala Arg Trp Pro Trp Leu Pro Pro Val Ile Pro Ala Leu
            85                    90                    95
Trp Lys Ala Glu Ala Gly Gly Glu Val Trp Ser Ser Lys Pro Ala Trp
            100                   105                   110
Pro Ala Trp Arg Asn Pro Val Ser Pro Ser Gln Ile His Val Ile Ile
            115                   120                   125
Pro Pro Gln Pro Pro Glu Tyr Leu Gly Leu
    130                   135
```

```
<210> 4297
<211> 1668
<212> DNA
<213> Homo sapiens

<400> 4297
nccatggact cggcctttgt gggtataaag gtcaaccaag tgtcagctgc agttggaaaa
60
gatttcaccg tgattccatc taaactgatt cagtttgacc caggaatgtc aactaagatg
120
tggaatatag caattaccta tgacggatta gaggaagatg atgaggtctt tgaagtaatt
180
ctgaactccc ctgtgaatgc agttcttggc acaaagacaa aagctgcagt gaaaattttg
240
gactcaaaag gaggacaatg ccatccttca tattcctcca accaaagcaa gcacagcaca
300
tgggagaagg gcatttggca tctgctgccc ccagggtctt cctcatccac cacttctggt
360
tcctttcatc tggaaagaag acctcttcca tcttccatgc agctagcagt catcagggga
420
gacaccctgc ggggctttga ttctacagat ctttctcaaa ggaagcttag gacccgtggg
480
aatggcaaaa cagttcgtcc atcctctgtt tatagaaatg aacagacat catctataat
540
tatcatggga tagtttcctt gaaactggag gatgacagtt ccccaactca caaaaggaag
600
gccaaagtat ccatcattag tcagccacaa aagacaatca agtggcaga actgcctcaa
660
gcagataagg tggaatccac aactgactca cacttcccca gacaggacca gttgccctca
720
tttccaaaga actgcactct ggaattaaag ggactcttcc attttgaaga aggcatccag
780
aagctgtatc agtgcaatgg gatcgcctgg aaagcctgga gtccccaaac caaggatgtg
840
gaagacaaat cctgtccagc cgggtggcac cagcactcag gctactgtca catcttgatc
900
```

acagagcaga aaggcacctg gaatgcggct gcccaagctt gcagggaaca atacctgggc
960
aaccttgtaa ctgtattctc caggcagcac atgcggtggc tctgggacat tggtgggaga
1020
aagtcctttt ggataggttt gaacgaccaa gtgcatgctg gccactggga gtggatcggt
1080
ggtgaacctg ttgccttcac caatgggaga agagggccct ctccacgctc caagcttgga
1140
aagagctgtg ttttggttca aagacaaggg aaatggcaaa caaaagactg taggagagcc
1200
aaacctcata attatgtgtg ttccagaaaa ctctaaatat aacagaccct acaggggggcc
1260
acctggagtt tgtcacctat ttattcacag gatctgtgaa tattgctcca tagaaaacaa
1320
attgttatga ttgagtgggt atacctttgt gattctgtct agtgaaaatg ggacattttt
1380
aatagtgcca gaaagattga taaataaata ttttttacaa gataagatac aatttttgta
1440
tctcaatacc ttttaaaata aatgccagca gtattaaaaa gtgtaaggtt tgtttattcc
1500
agaagaccct cacccttacc ccattccaaa tctcagggag caccagtctc atagtccttg
1560
gatttttttt aaaaaaaatt tttggtcccg ttacctctaa tgaatttatt ctgaaatatg
1620
tatcgtaggt gctcctacca ctttagtctg agtggaaagc caaaaaac
1668

<210> 4298
<211> 411
<212> PRT
<213> Homo sapiens

<400> 4298

Xaa	Met	Asp	Ser	Ala	Phe	Val	Gly	Ile	Lys	Val	Asn	Gln	Val	Ser	Ala
1				5					10				15		

Ala Val Gly Lys Asp Phe Thr Val Ile Pro Ser Lys Leu Ile Gln Phe
        20   25   30
Asp Pro Gly Met Ser Thr Lys Met Trp Asn Ile Ala Ile Thr Tyr Asp
        35   40   45
Gly Leu Glu Glu Asp Asp Glu Val Phe Glu Val Ile Leu Asn Ser Pro
      50   55   60
Val Asn Ala Val Leu Gly Thr Lys Thr Lys Ala Ala Val Lys Ile Leu
65   70   75   80
Asp Ser Lys Gly Gly Gln Cys His Pro Ser Tyr Ser Ser Asn Gln Ser
                85   90   95
Lys His Ser Thr Trp Glu Lys Gly Ile Trp His Leu Leu Pro Pro Gly
              100   105   110
Ser Ser Ser Ser Thr Thr Ser Gly Ser Phe His Leu Glu Arg Arg Pro
              115   120   125
Leu Pro Ser Ser Met Gln Leu Ala Val Ile Arg Gly Asp Thr Leu Arg
        130   135   140
Gly Phe Asp Ser Thr Asp Leu Ser Gln Arg Lys Leu Arg Thr Arg Gly
145   150   155   160
Asn Gly Lys Thr Val Arg Pro Ser Ser Val Tyr Arg Asn Gly Thr Asp

```
                      165                   170                    175
     Ile Ile Tyr Asn Tyr His Gly Ile Val Ser Leu Lys Leu Glu Asp Asp
                 180                   185                   190
     Ser Phe Pro Thr His Lys Arg Lys Ala Lys Val Ser Ile Ile Ser Gln
             195                   200                   205
     Pro Gln Lys Thr Ile Lys Val Ala Glu Leu Pro Gln Ala Asp Lys Val
         210                   215                   220
     Glu Ser Thr Thr Asp Ser His Phe Pro Arg Gln Asp Gln Leu Pro Ser
     225                   230                   235                   240
     Phe Pro Lys Asn Cys Thr Leu Glu Leu Lys Gly Leu Phe His Phe Glu
                 245                   250                   255
     Glu Gly Ile Gln Lys Leu Tyr Gln Cys Asn Gly Ile Ala Trp Lys Ala
                 260                   265                   270
     Trp Ser Pro Gln Thr Lys Asp Val Glu Asp Lys Ser Cys Pro Ala Gly
             275                   280                   285
     Trp His Gln His Ser Gly Tyr Cys His Ile Leu Ile Thr Glu Gln Lys
         290                   295                   300
     Gly Thr Trp Asn Ala Ala Ala Gln Ala Cys Arg Glu Gln Tyr Leu Gly
     305                   310                   315                   320
     Asn Leu Val Thr Val Phe Ser Arg Gln His Met Arg Trp Leu Trp Asp
                 325                   330                   335
     Ile Gly Gly Arg Lys Ser Phe Trp Ile Gly Leu Asn Asp Gln Val His
                 340                   345                   350
     Ala Gly His Trp Glu Trp Ile Gly Gly Glu Pro Val Ala Phe Thr Asn
             355                   360                   365
     Gly Arg Arg Gly Pro Ser Pro Arg Ser Lys Leu Gly Lys Ser Cys Val
         370                   375                   380
     Leu Val Gln Arg Gln Gly Lys Trp Gln Thr Lys Asp Cys Arg Arg Ala
     385                   390                   395                   400
     Lys Pro His Asn Tyr Val Cys Ser Arg Lys Leu
                 405                   410
```

<210> 4299
<211> 988
<212> DNA
<213> Homo sapiens

<400> 4299
nngcgaccgc tcttgctgaa aggtggctgg gagaggtcct ggtcagagtc ggagtcagag
60
tcccaggagg ggagtggagg gctcaggcac tggtgccctt gtggcctctt aggctcgagg
120
ccttgggaca ggcccccgag cacaaagtga ggctgtctat ggagttctgc agcacgtgca
180
cagcagacca tatatcactc agttccttct ggaggtcatc cttccagcag ccactggctc
240
cctgcggtat ctcttcagtc tccggacagg cggctgtctc atgaccctgc tgcttcatct
300
tggtcaggat tttgcggcat ttcacctgcg ttttctgcat tttctgaatg ttcaccaagt
360
tctctgagat ctcatcctcc tgcgcttgga gcttctgata gatgaaggtc acctcctccc
420
gcaccagttc cagctcctcc cacaggaact tcttgctgtc ccggatctcc tgggccagca
480

```
gctgcaggca gcgagtggtg cgggcccgct gcatctcctc actgtcacgc agggtcttct
540
ccagcccctg aaggccttgg gtcagggccc catacagctc ctgccggccc tgctccatgc
600
cccacttgtg ctcctccttc tctccatggc ggcctgtggg gctcagcacc tcttcaagct
660
gctgaatctt gatttgctgc aagcagctct ccttctccaa catggtcact gagtggttca
720
ggaactcgaa agccttggtc tgggcctgta actggctctt gagtgactca agttcacatc
780
gcaggagctt ctgggagtcg ggaatcatca caatggtctt ggctttgact ttggaagagc
840
tggtctccaa gggcttcaca taccacctgt tcatgctctn cccatcaggg accacgaagc
900
cagtcctcag ctgtgacgct gaagtttgat cccgcgggga caccatcgta ttaaaacgct
960
cagagactga gtcacagaga ggggtgtc
988


<210> 4300
<211> 84
<212> PRT
<213> Homo sapiens

<400> 4300
Gly Cys Leu Trp Ser Ser Ala Ala Arg Ala Gln Gln Thr Ile Tyr His
1               5                   10                  15
Ser Val Pro Ser Gly Gly His Pro Ser Ser Ser His Trp Leu Pro Ala
            20                  25                  30
Val Ser Leu Gln Ser Pro Asp Arg Arg Leu Ser His Asp Pro Ala Ala
        35                  40                  45
Ser Ser Trp Ser Gly Phe Cys Gly Ile Ser Pro Ala Phe Ser Ala Phe
    50                  55                  60
Ser Glu Cys Ser Pro Ser Ser Leu Arg Ser His Pro Pro Ala Leu Gly
65                  70                  75                  80
Ala Ser Asp Arg


<210> 4301
<211> 2429
<212> DNA
<213> Homo sapiens

<400> 4301
nnaggcaccg cggcgctcgg gtgtttttgg gggcccgggt ggagggcccg ggtgccgggg
60
cccaaggtgc ggcctcgcta gcgggagagg gagcgggatc accggcccgg agagagctct
120
cagggccaga gcggggcagg aggatgcttt cccagcccca ccatggagct gcgctgtggg
180
ggattgctgt tcagttctcg ctttgattca gggaatctag cccacgtgga gaaggtggaa
240
tctttgtcca gtgatgggga aggggtagga ggtggggcgt cagccctgac cagtggcatt
300
```

```
gcctcttccc ctgactatga attcaacgtg tggacccgac cagactgtgc tgaaacggaa
360
tttgagaatg ggaacaggtc atggttctac ttcagcgtcc ggggaggaat gccaggaaaa
420
ctcatcaaga tcaacattat gaacatgaac aagcagagca agctgtattc ccagggcatg
480
gccccctttg tgcgcacact gcccacccgg ccacgctggg aacgcattcg agaccggccc
540
acctttgaga tgacagagac gcagtttgtg ttatcctttg ttcatcgttt cgtggagggc
600
cgtggggcca ccaccttctt cgccttctgc tacccccttct cctacagtga ctgccaggaa
660
ctgctaaacc agctagacca gcgctttccg gagaaccacc ctacccatag cagcccctg
720
gataccatct attaccatcg ggagctcctt tgctattctc tggatggact tcgtgtagat
780
ctgctgacga tcacttcctg ccatgggctt cgagaagatc gagagccccg tctagagcag
840
ctatttcctg ataccagcac ccctcgacca ttccgtttcg caggcaagag gatattcttc
900
ttaagcagta gagtacaccc aggggagact ccatctagct ttgtcttcaa tggctttctg
960
gacttcatcc tccgacctga tgatccccgg gcccaaaccc tccgtcgcct cttcgtcttt
1020
aagctgattc ccatgttgaa ccccgatggt gtggtccggg gacactaccg cacagactca
1080
cgtggagtga atctgaaccg tcagtacctg aagcctgatg ccgtcctgca cccggccatc
1140
tatggggcca aagctgtgct tctctaccac catgtgcact ctcgtctgaa ctcccagagt
1200
tcctctgagc accagcccag ttcctgtctc cctcctgatg ctcctgtttc tgacctggag
1260
aaagccaaca atctccaaaa tgaagctcag tgtgggcact cagctgacag gcataacgct
1320
gaagcctgga aacaaacaga gccagcagaa cagaagctca acagtgtgtg gattatgcca
1380
caacagtctg cggggcttga agagtcagcc cctgatacca tcccccccaa agagagtggc
1440
gttgcttact atgtggacct gcatggacat gcttccaaaa ggggctgctt catgtacgga
1500
aacagcttta gtgatgagag cacccaggtg gaaaacatgc tatatccaaa gctcatctcc
1560
ttgaattcag cccacttcga cttccagggc tgcaatttct cagagaagaa tatgtatgcc
1620
cgagaccgta gagatggcca gtctaaagag ggaagcggcc gtgttgcaat ctacaaagcc
1680
tcagggataa tccacagcta cacacttgaa tgcaactaca acactggacg ctcagtaaac
1740
agcatccctg ctgcctgcca tgacaatggg cgtgccagcc cccctccccc gccggctttc
1800
ccctccagat acactgtgga actatttgag caggtgggac gagctatggc cattgcagcc
1860
ctggacatgg cggaatgtaa tccgtggccc cgaattgtac tgtcagagca cagcagcctt
1920
```

```
actaatctac gggcctggat gctgaaacat gtacgcaaca gccgaggcct aagcagcact
1980
ctgaatgtgg gtgtcaacaa gaagaggggc cttcgaactc cacccaaaag tcacaatggg
2040
ttgcctgtct cctgctccga aaacaccttg agtcgggcac gaagtttag caccggcaca
2100
agtgccggtg gtagcagcag cagccaacaa aattctccac agatgaagaa ttcccccagc
2160
tttccttttc atggcagtcg gcctgcaggg ctgccaggcc tgggctctag tacccaaaag
2220
gtcacccacc gggtgctggg ccccgtcaga ggtaagccag tctgggagcc cctgcaacat
2280
gtgttcggtt gtctggggca ttgctggggg aagtaagagc ttgaagatat actgttggcc
2340
caggaccaag gggtgaatca ataaaattag tttgtagcag aaaaaaaaaa aaaaaaaaaa
2400
aaaaaaaaaa aaaaaaaaaa aaaaaaaaa
2429


<210> 4302
<211> 717
<212> PRT
<213> Homo sapiens

<400> 4302
Met Glu Leu Arg Cys Gly Gly Leu Leu Phe Ser Ser Arg Phe Asp Ser
1               5                   10                  15
Gly Asn Leu Ala His Val Glu Lys Val Glu Ser Leu Ser Ser Asp Gly
            20                  25                  30
Glu Gly Val Gly Gly Gly Ala Ser Ala Leu Thr Ser Gly Ile Ala Ser
        35                  40                  45
Ser Pro Asp Tyr Glu Phe Asn Val Trp Thr Arg Pro Asp Cys Ala Glu
    50                  55                  60
Thr Glu Phe Glu Asn Gly Asn Arg Ser Trp Phe Tyr Phe Ser Val Arg
65                  70                  75                  80
Gly Gly Met Pro Gly Lys Leu Ile Lys Ile Asn Ile Met Asn Met Asn
                85                  90                  95
Lys Gln Ser Lys Leu Tyr Ser Gln Gly Met Ala Pro Phe Val Arg Thr
            100                 105                 110
Leu Pro Thr Arg Pro Arg Trp Glu Arg Ile Arg Asp Arg Pro Thr Phe
            115                 120                 125
Glu Met Thr Glu Thr Gln Phe Val Leu Ser Phe Val His Arg Phe Val
        130                 135                 140
Glu Gly Arg Gly Ala Thr Thr Phe Phe Ala Phe Cys Tyr Pro Phe Ser
145                 150                 155                 160
Tyr Ser Asp Cys Gln Glu Leu Leu Asn Gln Leu Asp Gln Arg Phe Pro
                165                 170                 175
Glu Asn His Pro Thr His Ser Ser Pro Leu Asp Thr Ile Tyr Tyr His
            180                 185                 190
Arg Glu Leu Leu Cys Tyr Ser Leu Asp Gly Leu Arg Val Asp Leu Leu
            195                 200                 205
Thr Ile Thr Ser Cys His Gly Leu Arg Glu Asp Arg Glu Pro Arg Leu
        210                 215                 220
Glu Gln Leu Phe Pro Asp Thr Ser Thr Pro Arg Pro Phe Arg Phe Ala
```

```
225                     230                     235                     240
Gly Lys Arg Ile Phe Phe Leu Ser Ser Arg Val His Pro Gly Glu Thr
                245                     250                     255
Pro Ser Ser Phe Val Phe Asn Gly Phe Leu Asp Phe Ile Leu Arg Pro
                260                     265                     270
Asp Asp Pro Arg Ala Gln Thr Leu Arg Arg Leu Phe Val Phe Lys Leu
                275                     280                     285
Ile Pro Met Leu Asn Pro Asp Gly Val Val Arg Gly His Tyr Arg Thr
        290                     295                     300
Asp Ser Arg Gly Val Asn Leu Asn Arg Gln Tyr Leu Lys Pro Asp Ala
305                     310                     315                     320
Val Leu His Pro Ala Ile Tyr Gly Ala Lys Ala Val Leu Leu Tyr His
                325                     330                     335
His Val His Ser Arg Leu Asn Ser Gln Ser Ser Ser Glu His Gln Pro
                340                     345                     350
Ser Ser Cys Leu Pro Pro Asp Ala Pro Val Ser Asp Leu Glu Lys Ala
                355                     360                     365
Asn Asn Leu Gln Asn Glu Ala Gln Cys Gly His Ser Ala Asp Arg His
        370                     375                     380
Asn Ala Glu Ala Trp Lys Gln Thr Glu Pro Ala Glu Gln Lys Leu Asn
385                     390                     395                     400
Ser Val Trp Ile Met Pro Gln Gln Ser Ala Gly Leu Glu Glu Ser Ala
                405                     410                     415
Pro Asp Thr Ile Pro Pro Lys Glu Ser Gly Val Ala Tyr Tyr Val Asp
  .             420                     425                     430
Leu His Gly His Ala Ser Lys Arg Gly Cys Phe Met Tyr Gly Asn Ser
                435                     440                     445
Phe Ser Asp Glu Ser Thr Gln Val Glu Asn Met Leu Tyr Pro Lys Leu
        450                     455                     460
Ile Ser Leu Asn Ser Ala His Phe Asp Phe Gln Gly Cys Asn Phe Ser
465                     470                     475                     480
Glu Lys Asn Met Tyr Ala Arg Asp Arg Arg Asp Gly Gln Ser Lys Glu
                485                     490                     495
Gly Ser Gly Arg Val Ala Ile Tyr Lys Ala Ser Gly Ile Ile His Ser
                500                     505                     510
Tyr Thr Leu Glu Cys Asn Tyr Asn Thr Gly Arg Ser Val Asn Ser Ile
                515                     520                     525
Pro Ala Ala Cys His Asp Asn Gly Arg Ala Ser Pro Pro Pro Pro Pro
        530                     535                     540
Ala Phe Pro Ser Arg Tyr Thr Val Glu Leu Phe Glu Gln Val Gly Arg
545                     550                     555                     560
Ala Met Ala Ile Ala Ala Leu Asp Met Ala Glu Cys Asn Pro Trp Pro
                565                     570                     575
Arg Ile Val Leu Ser Glu His Ser Ser Leu Thr Asn Leu Arg Ala Trp
                580                     585                     590
Met Leu Lys His Val Arg Asn Ser Arg Gly Leu Ser Ser Thr Leu Asn
        595                     600                     605
Val Gly Val Asn Lys Lys Arg Gly Leu Arg Thr Pro Pro Lys Ser His
        610                     615                     620
Asn Gly Leu Pro Val Ser Cys Ser Glu Asn Thr Leu Ser Arg Ala Arg
625                     630                     635                     640
Ser Phe Ser Thr Gly Thr Ser Ala Gly Gly Ser Ser Ser Ser Gln Gln
                645                     650                     655
Asn Ser Pro Gln Met Lys Asn Ser Pro Ser Phe Pro Phe His Gly Ser
```

```
              660                665               670
Arg Pro Ala Gly Leu Pro Gly Leu Gly Ser Ser Thr Gln Lys Val Thr
         675                680                685
His Arg Val Leu Gly Pro Val Arg Gly Lys Pro Val Trp Glu Pro Leu
     690                695                700
Gln His Val Phe Gly Cys Leu Gly His Cys Trp Gly Lys
705                710                715
```

<210> 4303
<211> 768
<212> DNA
<213> Homo sapiens

<400> 4303
acgcgtgcag caagagagct ggacaatctg cagtatcgaa agatgaagaa actccttttc
60
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120
ggtgttggcc ggacaggaac agttaatagt gttggaagta atcaatccat tcccagcatg
180
tccatcagtg ccagcagcca aagcagtagt gttaacagtc ttccagatgt ctcagatgac
240
aagagtgagc tagacatgat ggagggagac cacacagtga tgtctaacag ttctgttatc
300
catttaaaac cagaggaaga aaattacaga gaagagggag atcctagaac aagagcatca
360
gatccacaat ctccacccca agtatctcgt cacaaatcac actatcgtaa tcgagaacac
420
tttgctacta tacggacagc atcactggtt acgaggcaaa tgcaagaaca tgagcaggac
480
tctgagctta gagaacaaat gtctggctat aagcgaatga ggcgacaaca tcaaaagcaa
540
ctgatgactc tggaaaacaa gctaaaggct gagatggatg aacatcgcct cagattagac
600
aaagatcttg aaactcagcg taacaatttt gctgcagaaa tggagaaact tatcaagaaa
660
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720
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768

<210> 4304
<211> 256
<212> PRT
<213> Homo sapiens

<400> 4304
```
Thr Arg Ala Ala Arg Glu Leu Asp Asn Leu Gln Tyr Arg Lys Met Lys
1               5                10                15
Lys Leu Leu Phe Gln Glu Ala His Asn Gly Pro Ala Val Glu Ala Gln
           20                25                30
Glu Glu Glu Glu Glu Gln Asp His Gly Val Gly Arg Thr Gly Thr Val
          35                40                45
Asn Ser Val Gly Ser Asn Gln Ser Ile Pro Ser Met Ser Ile Ser Ala
```

```
            50                        55                        60
Ser Ser Gln Ser Ser Ser Val Asn Ser Leu Pro Asp Val Ser Asp Asp
65                        70                        75                        80
Lys Ser Glu Leu Asp Met Met Glu Gly Asp His Thr Val Met Ser Asn
                    85                        90                        95
Ser Ser Val Ile His Leu Lys Pro Glu Glu Glu Asn Tyr Arg Glu Glu
                100                        105                       110
Gly Asp Pro Arg Thr Arg Ala Ser Asp Pro Gln Ser Pro Pro Gln Val
                115                        120                       125
Ser Arg His Lys Ser His Tyr Arg Asn Arg Glu His Phe Ala Thr Ile
            130                        135                       140
Arg Thr Ala Ser Leu Val Thr Arg Gln Met Gln Glu His Glu Gln Asp
145                        150                       155                       160
Ser Glu Leu Arg Glu Gln Met Ser Gly Tyr Lys Arg Met Arg Arg Gln
                    165                       170                       175
His Gln Lys Gln Leu Met Thr Leu Glu Asn Lys Leu Lys Ala Glu Met
                180                        185                       190
Asp Glu His Arg Leu Arg Leu Asp Lys Asp Leu Glu Thr Gln Arg Asn
                195                        200                       205
Asn Phe Ala Ala Glu Met Glu Lys Leu Ile Lys Lys His Gln Ala Ala
            210                        215                       220
Met Glu Lys Glu Ala Lys Val Met Ser Asn Glu Glu Lys Lys Phe Gln
225                        230                       235                       240
Gln His Ile Gln Ala Gln Gln Lys Lys Glu Leu Asn Ser Phe Leu Glu
                    245                       250                       255
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<210> 4305
<211> 3400
<212> DNA
<213> Homo sapiens
```

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<400> 4305
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120
cccggggccg gggccgacgc gctcgagtcc cccgcctccc cccagctcgt gctgccggcc
180
aacctcgggg acattgaggc actgaacctg gggaacaacg gcctggagga ggtacccgag
240
gggctggggt cggcgctggg cagcctgcgc gtcctggtcc tgcgcaggaa ccgcttcgcc
300
cggctgcccc cggcggtggc cgagctcggc caccacctca ccgagctgga cgtgagccac
360
aaccggctga ccgccctggg cgcggaggtg gtgagtgctc tgagggagct gcggaagctc
420
aacctcagcc acaaccagct gcccgccctg cccgcccagc tgggcgctct cgctcacctg
480
gaggagctgg atgtcagctt taaccggctg gcgcacctgc ctgactccct ctcctgcctc
540
tcccgcctgc gcaccctgga cgtggatcac aaccagctca ctgccttccc ccggcagctg
600
ctgcagctgg tggccctgga ggagctggac gtgtccagca accggctgcg gggcctgcct
660
```

```
gaggatatca gtgccctgcg tgccctcaag atcctctggc tgagtggggc cgagcttggc
720
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780
gggctgcagg ctctgcccgc ccagttcagc tgcctgcagc ggctcaaaat gctcaacctg
840
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1080
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1140
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1200
cattcccagc cggcggtgca gccccggctc aagctgctcc tgatggggca taaggctgca
1260
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1320
ggggacaagg agaagtgcta cccaccgtca cctccccctg tgagcaaggg catcgaggtg
1380
accagctgga cggccgatgc ctcccggggc ctgcggttca tcgtgtatga cttagctggg
1440
gatgaaagtt atgaggtgat ccagcccttc ttcctgtccc cagggggccct atacgtgctg
1500
gtggtcaact tggccaccta tgagcctcgc cactttccta ccaccgtggg ctccttcttg
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1620
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1740
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1800
aagaaccttc gacggcgcaa ggcccatttt caatacctgc tcaaccaccg gctgcagatc
1860
ctctcccccg tgttgcctgt tagctgcagg gacccgcgcc acttacgacg ccttcgggac
1920
aagttgctgt cagttgctga gcaccgagag atcttcccca acttacacag agtactgcct
1980
cgatcctggc aggtgctgga ggaactgcat ttccagccac ctcaggccca gcgactgtgg
2040
ctaagctggt gggactcggc gcgcttgggc ctgcaggcgg tctgaccga ggaccgactg
2100
cagagtgccc tctcctacct gcatgagagc ggcaagctac tctactttga ggacagtccg
2160
gctctcaagg agcacgtctt ccacaacctc acccgcctca tcgacatcct caatgtcttc
2220
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2280
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                                     3502

aaggcggagg gggaaagctc cccgcccatg gcgcggtcca cccccagcca ggaactgctc
2340

cgggccaccc agctccatca gtatgtggag ggctttctgt tgcatgggct cttgccagct
2400

catgtcattc ggttgctgct taagcctcat gtccaggccc agcaggactt gcagctgttg
2460

ctggagctgc tggagaagat gggactctgt tactgcctca ataaacccaa gggcaagcct
2520

ttgaatgggt ccacagcttg gtacaagttc ccatgctatg tgcagaacga ggtgccccat
2580

gcagaagcct ggattaatgg gaccaaccta gctgggcagt cttttgtggc tgagcagttg
2640

cagattgaat atagctttcc ttttactttt ccacctgggt tgtttgcacg ctacagtgtc
2700

cagatcaaca gccatgtggt gcacaggtcg gatggtaaat ttcagatctt tgcctataga
2760

gggaaagttc ctgtggttgt gagttacaga cctgccaggg gagtcctgca gccagacacc
2820

ctgtccattg ctagccatgc atcattacca aatatatgga ccgcatggca agccataacc
2880

cccttggtgg aggaactgaa tgtcctactt caggaatggc ctggactgca ctacaccgtg
2940

cacattctct gttctaagtg ccttaagaga ggatcgccca atccacatgc ttttccaggg
3000

gagttgctga gtcagcccag accggaagga gtggcagaga tcatttgccc caagaacggc
3060

agcgagcgag taaatgttgc cttggtttac ccacccacgc cgactgtgat cagcccctgt
3120

tccaagaaga atgttggtga aaagcacaga aaccagtgac gtttgtggct gtggaatttc
.3180

catggagaaa agagagcatc tgaacacctg gaccatcttt tgcacctggc agaccctctg
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cactcacccc agcgtgttct gtgaacttga gtgacaacgc gtgcttgcag ggtgcttttt
3300

ggatgactgg ggaagaggtg gggagagggg tggtgggggg aagcatggac gagaacatgg
3360

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3400

<210> 4306
<211> 1052
<212> PRT
<213> Homo sapiens

<400> 4306
Met Ala Gly Met Asp Ser Gly Asn Leu Lys Thr Ala Arg Leu Trp Arg
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Asp Ala Ala Leu Arg Ala Arg Lys Leu Arg Ser Asn Leu Arg Gln Leu
            20   25   30
Thr Leu Thr Ala Ala Gly Ala Cys Pro Gly Ala Gly Ala Asp Ala Leu
        35   40   45
Glu Ser Pro Ala Ser Pro Gln Leu Val Leu Pro Ala Asn Leu Gly Asp
        50   55   60
Ile Glu Ala Leu Asn Leu Gly Asn Asn Gly Leu Glu Glu Val Pro Glu

```
65                    70                    75                    80
Gly Leu Gly Ser Ala Leu Gly Ser Leu Arg Val Leu Val Leu Arg Arg
                85                    90                    95
Asn Arg Phe Ala Arg Leu Pro Pro Ala Val Ala Glu Leu Gly His His
                100                   105                   110
Leu Thr Glu Leu Asp Val Ser His Asn Arg Leu Thr Ala Leu Gly Ala
                115                   120                   125
Glu Val Val Ser Ala Leu Arg Glu Leu Arg Lys Leu Asn Leu Ser His
                130                   135                   140
Asn Gln Leu Pro Ala Leu Pro Ala Gln Leu Gly Ala Leu Ala His Leu
145                   150                   155                   160
Glu Glu Leu Asp Val Ser Phe Asn Arg Leu Ala His Leu Pro Asp Ser
                165                   170                   175
Leu Ser Cys Leu Ser Arg Leu Arg Thr Leu Asp Val Asp His Asn Gln
                180                   185                   190
Leu Thr Ala Phe Pro Arg Gln Leu Leu Gln Leu Val Ala Leu Glu Glu
                195                   200                   205
Leu Asp Val Ser Ser Asn Arg Leu Arg Gly Leu Pro Glu Asp Ile Ser
                210                   215                   220
Ala Leu Arg Ala Leu Lys Ile Leu Trp Leu Ser Gly Ala Glu Leu Gly
225                   230                   235                   240
Thr Leu Pro Ala Gly Phe Cys Glu Leu Ala Ser Leu Glu Ser Leu Met
                245                   250                   255
Leu Asp Asn Asn Gly Leu Gln Ala Leu Pro Ala Gln Phe Ser Cys Leu
                260                   265                   270
Gln Arg Leu Lys Met Leu Asn Leu Ser Ser Asn Leu Phe Glu Glu Phe
                275                   280                   285
Pro Ala Ala Leu Leu Pro Leu Ala Gly Leu Glu Glu Leu Tyr Leu Ser
                290                   295                   300
Arg Asn Gln Leu Thr Ser Val Pro Ser Leu Ile Ser Gly Leu Gly Arg
305                   310                   315                   320
Leu Leu Thr Leu Trp Leu Asp Asn Asn Arg Ile Arg Tyr Leu Pro Asp
                325                   330                   335
Ser Ile Val Glu Leu Thr Gly Leu Glu Glu Leu Val Leu Gln Gly Asn
                340                   345                   350
Gln Ile Ala Val Leu Pro Asp His Phe Gly Gln Leu Ser Arg Val Gly
                355                   360                   365
Leu Trp Lys Ile Lys Asp Asn Pro Leu Ile Gln Pro Pro Tyr Glu Val
                370                   375                   380
Cys Met Lys Gly Ile Pro Tyr Ile Ala Ala Tyr Gln Lys Glu Leu Ala
385                   390                   395                   400
His Ser Gln Pro Ala Val Gln Pro Arg Leu Lys Leu Leu Leu Met Gly
                405                   410                   415
His Lys Ala Ala Gly Lys Thr Leu Leu Arg His Cys Leu Thr Glu Glu
                420                   425                   430
Arg Val Glu Gly Cys Pro Gly Gly Gly Asp Lys Glu Lys Cys Tyr Pro
                435                   440                   445
Pro Ser Pro Pro Val Ser Lys Gly Ile Glu Val Thr Ser Trp Thr
                450                   455                   460
Ala Asp Ala Ser Arg Gly Leu Arg Phe Ile Val Tyr Asp Leu Ala Gly
465                   470                   475                   480
Asp Glu Ser Tyr Glu Val Ile Gln Pro Phe Phe Leu Ser Pro Gly Ala
                485                   490                   495
Leu Tyr Val Leu Val Val Asn Leu Ala Thr Tyr Glu Pro Arg His Phe
```

3504

```
            500                    505                    510
Pro Thr Thr Val Gly Ser Phe Leu His Arg Val Gly Ala Arg Val Pro
        515                    520                    525
Asn Ala Val Val Cys Ile Val Gly Thr His Ala Asp Leu Cys Gly Glu
    530                    535                    540
Arg Glu Leu Glu Glu Lys Cys Leu Asp Ile His Arg Gln Ile Ala Leu
545                    550                    555                    560
Gln Glu Lys His Asp Ala Glu Gly Leu Ser Arg Leu Ala Lys Val Val
                565                    570                    575
Asp Glu Ala Leu Ala Arg Asp Phe Glu Leu Arg Ser Ala Ser Pro His
                580                    585                    590
Ala Ala Tyr Tyr Gly Val Ser Asp Lys Asn Leu Arg Arg Arg Lys Ala
        595                    600                    605
His Phe Gln Tyr Leu Leu Asn His Arg Leu Gln Ile Leu Ser Pro Val
    610                    615                    620
Leu Pro Val Ser Cys Arg Asp Pro Arg His Leu Arg Arg Leu Arg Asp
625                    630                    635                    640
Lys Leu Leu Ser Val Ala Glu His Arg Glu Ile Phe Pro Asn Leu His
                645                    650                    655
Arg Val Leu Pro Arg Ser Trp Gln Val Leu Glu Glu Leu His Phe Gln
                660                    665                    670
Pro Pro Gln Ala Gln Arg Leu Trp Leu Ser Trp Trp Asp Ser Ala Arg
            675                    680                    685
Leu Gly Leu Gln Ala Gly Leu Thr Glu Asp Arg Leu Gln Ser Ala Leu
        690                    695                    700
Ser Tyr Leu His Glu Ser Gly Lys Leu Leu Tyr Phe Glu Asp Ser Pro
705                    710                    715                    720
Ala Leu Lys Glu His Val Phe His Asn Leu Thr Arg Leu Ile Asp Ile
                725                    730                    735
Leu Asn Val Phe Phe Gln Arg Asp Pro Ser Leu Leu Leu His Lys Leu
                740                    745                    750
Leu Leu Gly Thr Ser Gly Glu Gly Lys Ala Glu Gly Glu Ser Ser Pro
            755                    760                    765
Pro Met Ala Arg Ser Thr Pro Ser Gln Glu Leu Leu Arg Ala Thr Gln
    770                    775                    780
Leu His Gln Tyr Val Glu Gly Phe Leu Leu His Gly Leu Leu Pro Ala
785                    790                    795                    800
His Val Ile Arg Leu Leu Leu Lys Pro His Val Gln Ala Gln Gln Asp
                805                    810                    815
Leu Gln Leu Leu Leu Glu Leu Leu Glu Lys Met Gly Leu Cys Tyr Cys
            820                    825                    830
Leu Asn Lys Pro Lys Gly Lys Pro Leu Asn Gly Ser Thr Ala Trp Tyr
        835                    840                    845
Lys Phe Pro Cys Tyr Val Gln Asn Glu Val Pro His Ala Glu Ala Trp
    850                    855                    860
Ile Asn Gly Thr Asn Leu Ala Gly Gln Ser Phe Val Ala Glu Gln Leu
865                    870                    875                    880
Gln Ile Glu Tyr Ser Phe Pro Phe Thr Phe Pro Pro Gly Leu Phe Ala
                885                    890                    895
Arg Tyr Ser Val Gln Ile Asn Ser His Val Val His Arg Ser Asp Gly
            900                    905                    910
Lys Phe Gln Ile Phe Ala Tyr Arg Gly Lys Val Pro Val Val Val Ser
        915                    920                    925
Tyr Arg Pro Ala Arg Gly Val Leu Gln Pro Asp Thr Leu Ser Ile Ala
```

```
           930                    935                    940
Ser His Ala Ser Leu Pro Asn Ile Trp Thr Ala Trp Gln Ala Ile Thr
945                    950                    955                    960
Pro Leu Val Glu Glu Leu Asn Val Leu Leu Gln Glu Trp Pro Gly Leu
                 965                    970                    975
His Tyr Thr Val His Ile Leu Cys Ser Lys Cys Leu Lys Arg Gly Ser
                 980                    985                    990
Pro Asn Pro His Ala Phe Pro Gly Glu Leu Leu Ser Gln Pro Arg Pro
                 995                    1000                   1005
Glu Gly Val Ala Glu Ile Ile Cys Pro Lys Asn Gly Ser Glu Arg Val
         1010           .  1015                   1020
Asn Val Ala Leu Val Tyr Pro Pro Thr Pro Thr Val Ile Ser Pro Cys
1025                    1030                   1035                   1040
Ser Lys Lys Asn Val Gly Glu Lys His Arg Asn Gln
                 1045                   1050
```

<210> 4307
<211> 947
<212> DNA
<213> Homo sapiens

<400> 4307
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120
aggacagaac tgatcgatac gtccaggctc tgaggaccgt ctctctcctc ctgggcgagc
180
cgttcttcac taccagcctg ctgccgtggc acaacctcta cttctggtac gtgcggacgc
240
tgtggaccag cacctggggc caggtgccat ggtgatgccc caggcagcct cgctgcacgc
300
tgtggttgtg gagttcaggg tgtgcaggga acagcaagat gtgcctcttg ttcttgctgc
360
cacgcttccc tgtgtcctgc gggcgggtgt ggatggggct gctccttcct cacaggancc
420
tgtggcggat ccggagccnc ctgtggtgac tgcgaaggct tcgacgtgca catcatggat
480
gacatgatta aggtaggcag ggccacactc tgcatagtcc ccccgacctg ctcctgtatc
540
gcaggcctct cacagggtcc agcttgggc agcacaggct cttctgttgg gggcagtgag
600
gtcaggtgct gccattttgt gtggttcaac atgagcattg cttggtacca gccctgttct
660
tggctccgtg ctgtcaccct gtgtcagaat ctccactggg cctgcacgtc ctgtcattgc
720
aactgcccct gccagtgccc acagcttctt ttctagtggg gctgactttc cagaggccat
780
ctgggaacct tcttaggcag ccatttccat ggtgggggct ccattcccgg gaggggtacc
840
tgaggagatt cccacaggtt atttacatgg tagggttag caactgggcc tacgttctcc
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agaaccatgg gctgtcctga cagcgccagt ggtccttgga ttcatga
947
```

<210> 4308
<211> 200
<212> PRT
<213> Homo sapiens

<400> 4308
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Gly Pro Ser Leu Ser Ser Trp Ala Ser Arg Ser Ser Leu Pro Ala Cys
 1               5                  10                  15
Cys Arg Gly Thr Thr Ser Thr Ser Gly Thr Cys Gly Arg Cys Gly Pro
            20                  25                  30
Ala Pro Gly Ala Arg Cys His Gly Asp Ala Pro Gly Ser Leu Ala Ala
         35                  40                  45
Arg Cys Gly Cys Gly Val Gln Gly Val Gln Gly Thr Ala Arg Cys Ala
     50                  55                  60
Ser Cys Ser Cys Cys His Ala Ser Leu Cys Pro Ala Gly Gly Cys Gly
65                  70                  75                  80
Trp Gly Cys Ser Phe Leu Thr Gly Xaa Cys Gly Gly Ser Gly Ala Xaa
                85                  90                  95
Cys Gly Asp Cys Glu Gly Phe Asp Val His Ile Met Asp Asp Met Ile
            100                 105                 110
Lys Val Gly Arg Ala Thr Leu Cys Ile Val Pro Pro Thr Cys Ser Cys
            115                 120                 125
Ile Ala Gly Leu Ser Gln Gly Pro Ser Leu Gly Ser Thr Gly Ser Ser
    130                 135                 140
Val Gly Gly Ser Glu Val Arg Cys Cys His Phe Val Trp Phe Asn Met
145                 150                 155                 160
Ser Ile Ala Trp Tyr Gln Pro Cys Ser Trp Leu Arg Ala Val Thr Leu
                165                 170                 175
Cys Gln Asn Leu His Trp Ala Cys Thr Ser Cys His Cys Asn Cys Pro
            180                 185                 190
Cys Gln Cys Pro Gln Leu Leu Phe
            195             200
```

<210> 4309
<211> 1928
<212> DNA
<213> Homo sapiens

<400> 4309
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gcagtcctca atgctcattt ccatgatttt aagagttgat aactccatgt catgattatt
120
gtcgcctttg acactggaga actgaacaga ttgggagggt gatgtgttaa gaccacataa
180
tccatttgaa atctcaacct tttcagggtc actatcacct tcaatgacat tcacagaagt
240
ttcccgatct gttaaactgt ctgaaatact tggatgattt tcatccaaag ttgaagtttc
300
aagatttgtt tcatcattca cctgttgaat tataacccct tctgaatgct ttgatttata
360
aataggcatg aaaaattcag ttggtgaagg gaatatctcg ttctcatcct ttggtgccga
420
```

```
caataacata tccaaagcct tttggtattg ttgacgttcc tgctgaattg ttacttcact
480
ttcatttttt aattcatttg gttctgaatt cccagccttt tcaaaatcaa atacattcaa
540
catatcaaca tcattttgct ttaccgagtt ttcctccgat gtgcagccta agtctacttt
600
caggacatgc agcaggtggc gcattttttc ctcctccaaa tgtttatttt gttttatatg
660
tcgctcgaac agtcgttcta aaaacctgtt tgaaaataaa ccaagtttca aaatttcatc
720
tgttacatct tcaatgaaac tcagatacaa cagttcttct tcatcagagt agattttacg
780
agttgaaggg ggcttcaggg aatactgaca cattgccctt ggtgaggaat gctgaagagc
840
atcatcctta atctcatccc atgttgagtc atgcccttct aaaggtaaag gagctatttt
900
ttctttggca tcatatgtca cacaattaga tgcctgcttt atgttcattt ctgaatctgt
960
catgttttta gtctcagctg tccccaactc agatttaaag cttaattcag tctgggtttc
1020
agcttctatc cgttgatctg taaaatcctt ttttcttttg gcaggtgtat aatagcgata
1080
ctgtgacagg aaagattttg cttctgtttt taaagtgcga ggagtgaatg caattgttt
1140
gttagaaaag agttcagaat gtttatccaa -aagatcccca ctgggtgctt tcgaaatgac
1200
taactgaaac cggtgggaat ttgggaatgt gcttctgggc cttctgccat acagggctcc
1260
agagctcagt ttccggggcc cggaggctgc ataatccaca ctggacgggg aggaactgga
1320
gttcttctca ggaccatttg tgatgacttt actggattta tgtagactta ggtgtagtct
1380
ctctgaagag ggtactagtg accttgcaaa ggatgaaaat ccattcattt cttctttaa
1440
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1500
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1560
ttgtgctaat tcctttttga gtttctctct tcgttgttgg tctgcatact ttatgctggt
1620
actcacgctt actggaaccg agcagtctac tgcagctttg gctgaaagga tttattata
1680
gtgaacagcc atgtgattct tgaccagctg gagagtgctt agtctgagag aagaggagtc
1740
agtgcaaaaa gcattacttt tggtgctcaa gtgtccttta aataggcacg gtggaccata
1800
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1860
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1920
tggaggac
1928

<210> 4310
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<211> 599
<212> PRT
<213> Homo sapiens

<400> 4310
Met Asn Gly Ser Arg Arg Val Arg Ala Thr Ser Val Leu Pro Arg Tyr
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Gly Pro Pro Cys Leu Phe Lys Gly His Leu Ser Thr Lys Ser Asn Ala
            20              25                  30
Phe Cys Thr Asp Ser Ser Ser Leu Arg Leu Ser Thr Leu Gln Leu Val
        35                  40                  45
Lys Asn His Met Ala Val His Tyr Asn Lys Ile Leu Ser Ala Lys Ala
    50                  55                  60
Ala Val Asp Cys Ser Val Pro Val Ser Val Ser Thr Ser Ile Lys Tyr
65                  70                  75                  80
Ala Asp Gln Gln Arg Arg Glu Lys Leu Lys Lys Glu Leu Ala Gln Cys
                85                  90                  95
Glu Lys Glu Phe Lys Leu Thr Lys Thr Ala Met Arg Ala Asn Tyr Lys
            100                 105                 110
Asn Asn Ser Lys Ser Leu Phe Asn Thr Leu Gln Lys Pro Ser Gly Glu
            115                 120                 125
Pro Gln Ile Glu Asp Asp Met Leu Lys Glu Glu Met Asn Gly Phe Ser
        130                 135                 140
Ser Phe Ala Arg Ser Leu Val Pro Ser Ser Glu Arg Leu His Leu Ser
145                 150                 155                 160
Leu His Lys Ser Ser Lys Val Ile Thr Asn Gly Pro Glu Lys Asn Ser
                165                 170                 175
Ser Ser Ser Pro Ser Ser Val Asp Tyr Ala Ala Ser Gly Pro Arg Lys
            180                 185                 190
Leu Ser Ser Gly Ala Leu Tyr Gly Arg Arg Pro Arg Ser Thr Phe Pro
            195                 200                 205
Asn Ser His Arg Phe Gln Leu Val Ile Ser Lys Ala Pro Ser Gly Asp
        210                 215                 220
Leu Leu Asp Lys His Ser Glu Leu Phe Ser Asn Lys Gln Leu Pro Phe
225                 230                 235                 240
Thr Pro Arg Thr Leu Lys Thr Glu Ala Lys Ser Phe Leu Ser Gln Tyr
                245                 250                 255
Arg Tyr Tyr Thr Pro Ala Lys Arg Lys Lys Asp Phe Thr Asp Gln Arg
            260                 265                 270
Ile Glu Ala Glu Thr Gln Thr Glu Leu Ser Phe Lys Ser Glu Leu Gly
            275                 280                 285
Thr Ala Glu Thr Lys Asn Met Thr Asp Ser Glu Met Asn Ile Lys Gln
        290                 295                 300
Ala Ser Asn Cys Val Thr Tyr Asp Ala Lys Glu Lys Ile Ala Pro Leu
305                 310                 315                 320
Pro Leu Glu Gly His Asp Ser Thr Trp Asp Glu Ile Lys Asp Asp Ala
                325                 330                 335
Leu Gln His Ser Ser Pro Arg Ala Met Cys Gln Tyr Ser Leu Lys Pro
                340                 345                 350
Pro Ser Thr Arg Lys Ile Tyr Ser Asp Glu Glu Glu Leu Leu Tyr Leu
            355                 360                 365
Ser Phe Ile Glu Asp Val Thr Asp Glu Ile Leu Lys Leu Gly Leu Phe
        370                 375                 380
Ser Asn Arg Phe Leu Glu Arg Leu Phe Glu Arg His Ile Lys Gln Asn
```

```
385                      390                      395                      400
Lys His Leu Glu Glu Glu Lys Met Arg His Leu Leu His Val Leu Lys
                405                      410                      415
Val Asp Leu Gly Cys Thr Ser Glu Glu Asn Ser Val Lys Gln Asn Asp
                420                      425                      430
Val Asp Met Leu Asn Val Phe Asp Phe Glu Lys Ala Gly Asn Ser Glu
                435                      440                      445
Pro Asn Glu Leu Lys Asn Glu Ser Glu Val Thr Ile Gln Gln Glu Arg
        450                      455                      460
Gln Gln Tyr Gln Lys Ala Leu Asp Met Leu Leu Ser Ala Pro Lys Asp
465                      470                      475                      480
Glu Asn Glu Ile Phe Pro Ser Pro Thr Glu Phe Phe Met Pro Ile Tyr
                485                      490                      495
Lys Ser Lys His Ser Glu Gly Val Ile Ile Gln Gln Val Asn Asp Glu
                500                      505                      510
Thr Asn Leu Glu Thr Ser Thr Leu Asp Glu Asn His Pro Ser Ile Ser
                515                      520                      525
Asp Ser Leu Thr Asp Arg Glu Thr Ser Val Asn Val Ile Glu Gly Asp
        530                      535                      540
Ser Asp Pro Glu Lys Val Glu Ile Ser Asn Gly Leu Cys Gly Leu Asn
545                      550                      555                      560
Thr Ser Pro Ser Gln Ser Val Gln Phe Ser Ser Val Lys Gly Asp Asn
                565                      570                      575
Asn His Asp Met Glu Leu Ser Thr Leu Lys Ile Met Glu Met Ser Ile
                580                      585                      590
Glu Asp Cys Pro Leu Asp Val
        595
```

<210> 4311
<211> 432
<212> DNA
<213> Homo sapiens

<400> 4311

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nnacgcgtga agggcattcg cccttggaat tgtcagcgat gttttgcaca ttatgatgtc
60
cagagcattt tgtttaatat caacgaagcc atggctacga gggctaatgt ggggaaaagg
120
aaaaacataa ccactggggc atctgcagca tcccagactc agatgcctac gggccagaca
180
ggcaactgtg agtccccttt agggagcaag gaggacctca actccaaaga gaacctggat
240
gccgatgagg gagatgggaa aagtaacgac ctcgtcctta gttgtcctta ctttagaaat
300
gagactggag gggaaggcga caggcggatt gcgctctctc gagccaactc atcctctttc
360
agttctgggg aaagctgctc tttcgaatcg tcactcagct ctcactgcac aaatgcaggt
420
gtctccgtct tg
432
```

<210> 4312
<211> 144
<212> PRT

<213> Homo sapiens

<400> 4312
Xaa Arg Val Lys Gly Ile Arg Pro Trp Asn Cys Gln Arg Cys Phe Ala
 1   5   10   15
His Tyr Asp Val Gln Ser Ile Leu Phe Asn Ile Asn Glu Ala Met Ala
            20   25   30
Thr Arg Ala Asn Val Gly Lys Arg Lys Asn Ile Thr Thr Gly Ala Ser
        35   40   45
Ala Ala Ser Gln Thr Gln Met Pro Thr Gly Gln Thr Gly Asn Cys Glu
    50   55   60
Ser Pro Leu Gly Ser Lys Glu Asp Leu Asn Ser Lys Glu Asn Leu Asp
65   70   75   80
Ala Asp Glu Gly Asp Gly Lys Ser Asn Asp Leu Val Leu Ser Cys Pro
                85   90   95
Tyr Phe Arg Asn Glu Thr Gly Gly Glu Gly Asp Arg Arg Ile Ala Leu
            100   105   110
Ser Arg Ala Asn Ser Ser Ser Phe Ser Ser Gly Glu Ser Cys Ser Phe
        115   120   125
Glu Ser Ser Leu Ser Ser His Cys Thr Asn Ala Gly Val Ser Val Leu
    130   135   140

<210> 4313
<211> 936
<212> DNA
<213> Homo sapiens

<400> 4313
ggatccctcc tttttcctcc cctgccctgc ccaggcccag atggccttga ctgtaaagcc
60
aggtgctgcc tgacaggttc ttctctccct gtctctggtc attgatccat ctctttgtcc
120
attcagtatc caaccatcct ctccattctc ctctggacct caccactctc agagctgctt
180
gtcctggcag aatctacagt tcaccccaac tctatgcctt accctccca acccaacagc
240
atttgcagtt tgcaaaatat acagacccaa gtcctgaggg gactgaggac atgatgctgg
300
gcccaagtct cctgctcagg gcttctctcc aatgccagcc ctgccactcc ttcctcaccc
360
tccttggagc ctcctctgct gcttgtctat cccaacggcc ctgctcccct cccttcctgc
420
ccttcaccag ctttctggga caccatgccc tgaggaaggg acctttggtt ttctctaaac
480
atctttgaag ggctgaggca gtcagggctg gctgccttgt cactctttat ttggaagcca
540
ctcaaaccat tcccaagaag agggacctca gctggcaatc tggaaacctg gcccaggtct
600
gggcagatgt cttcacttct cctaccttcc cagtcttgtg atcctgtgat gagcaccagg
660
atggccctgt ggtccctaga gcacccctca tgctgtaggg tcctgcagcc ccatcctttc
720
tctactgggc cctggtatcc tggctcctct ctcagctctg ccactgatct ctgtgcctta
780

gtttacttct ctgcacgggg gactcacccc aagaccattt ccagcagctt cccaggtgat
840
gtggtgcccc aaggctgggc tttgcagctg tggcccagct ccttagtgct gcccaggaga
900
caccaggctg ctcagaatga ggtgactgcg ggcaac
936

<210> 4314
<211> 110
<212> PRT
<213> Homo sapiens

<400> 4314
Met Ser Ser Leu Leu Leu Pro Ser Gln Ser Cys Asp Pro Val Met Ser
1   5   10   15
Thr Arg Met Ala Leu Trp Ser Leu Glu His Pro Ser Cys Cys Arg Val
            20   25   30
Leu Gln Pro His Pro Phe Ser Thr Gly Pro Trp Tyr Pro Gly Ser Ser
        35   40   45
Leu Ser Ser Ala Thr Asp Leu Cys Ala Leu Val Tyr Phe Ser Ala Arg
    50   55   60
Gly Thr His Pro Lys Thr Ile Ser Ser Ser Phe Pro Gly Asp Val Val
65   70   75   80
Pro Gln Gly Trp Ala Leu Gln Leu Trp Pro Ser Ser Leu Val Leu Pro
            85   90   95
Arg Arg His Gln Ala Ala Gln Asn Glu Val Thr Ala Gly Asn
            100   105   110

<210> 4315
<211> 573
<212> DNA
<213> Homo sapiens

<400> 4315
nncctaatcc aatatgactg gtgtccttat aagaagagga aattaggaca cagacaggca
60
cagagcgatg accatgtgaa gacacaggga agagatggcc acctaccacc acgccatggt
120
cacctaccat ccaagccatg gtcaccttca ccaagccaca gtcatctacc atccaagcca
180
ccgtcaccta ccatccaagc catggccacc tacctgccaa gccatggcca cctacccgcc
240
aagccatggt cacctaccca ccaagtcatg gtcgcctacc atccaaggag caggcctgga
300
acagatcctt ccccagagcc ctcagtagga gccaaccctg ctgacacctt gatctcagac
360
ttcaagcctc cagaactgtg ggacaatcct tcactgtcat ttaatccacc cagcatgtgg
420
tctcttgtca cagttgcatt agccagtgaa cctacccggg cccttctgca gtcgcctggc
480
tcaggagtgg ttctggtcag gaagttctga ggccaggcag gatcgggaca ctccctggaa
540
agacccgagg gagatatttg ggaaacaaga tgg
573

```
<210> 4316
<211> 169
<212> PRT
<213> Homo sapiens

<400> 4316
Xaa Leu Ile Gln Tyr Asp Trp Cys Pro Tyr Lys Lys Arg Lys Leu Gly
 1               5                  10                  15
His Arg Gln Ala Gln Ser Asp Asp His Val Lys Thr Gln Gly Arg Asp
            20                  25                  30
Gly His Leu Pro Pro Arg His Gly His Leu Pro Ser Lys Pro Trp Ser
        35                  40                  45
Pro Ser Pro Ser His Ser His Leu Pro Ser Lys Pro Pro Ser Pro Thr
    50                  55                  60
Ile Gln Ala Met Ala Thr Tyr Leu Pro Ser His Gly His Leu Pro Ala
65                  70                  75                  80
Lys Pro Trp Ser Pro Thr His Gln Val Met Val Ala Tyr His Pro Arg
                85                  90                  95
Ser Arg Pro Gly Thr Asp Pro Ser Pro Glu Pro Ser Val Gly Ala Asn
            100                 105                 110
Pro Ala Asp Thr Leu Ile Ser Asp Phe Lys Pro Pro Glu Leu Trp Asp
            115                 120                 125
Asn Pro Ser Leu Ser Phe Asn Pro Pro Ser Met Trp Ser Leu Val Thr
            130                 135                 140
Val Ala Leu Ala Ser Glu Pro Thr Arg Ala Leu Leu Gln Ser Pro Gly
145                 150                 155                 160
Ser Gly Val Val Leu Val Arg Lys Phe
                    165

<210> 4317
<211> 744
<212> DNA
<213> Homo sapiens

<400> 4317
nntgaagaga agtcaaaaaa ctcatgacct gtcagagatt tggggtccat ttcaggatca
60
tcccatgccg aaaacatact ccagatattt aatgaatttc gtgatagccg cttattcaca
120
gatgttatca tttgggtgga aggaaaagaa tttccttgcc atagagctgt gctctcagcc
180
tgtagcagct acttcagagc tatgttttgt aatgaccaca gggaaagccg agaaatgttg
240
gttgagatca atggtatttt agctgaagct atggaatgtt ttttgcagta tgtttatact
300
ggaaaggtga agatcactac agagaatgta cagtatctct tgagacatc aagcctcttt
360
cagattagtg ttctccgtga tgcatgtgcc aagttcttgg aggagcaact tgatccttgt
420
aattgcttag gaatccagcg ctttgctgat acccattcac tcaaaacact cttcacaaaa
480
tgcaaaaatt ttgcgttaca gactttgag gatgtatccc agcacgaaga atttcttgag
540
```

cttgacaaag atgaacttat tgattatatt tgtagtgatg aacttgttat tggtaaagag
600
gagatggttt ttgaagccgt catgcgttgg gtctatcgtg ccgttgatct gagaagacca
660
ctgttacacg agctcctgac acatgtgaga ctccctctgt tgcatcccaa ctactttgtt
720
caaacagttg aagtggacca attg
744

<210> 4318
<211> 239
<212> PRT
<213> Homo sapiens

<400> 4318
Pro Val Arg Asp Leu Gly Ser Ile Ser Gly Ser Ser His Ala Glu Asn
 1   5   10   15
Ile Leu Gln Ile Phe Asn Glu Phe Arg Asp Ser Arg Leu Phe Thr Asp
                20   25   30
Val Ile Ile Trp Val Glu Gly Lys Glu Phe Pro Cys His Arg Ala Val
    ..   35   40   45
Leu Ser Ala Cys Ser Ser Tyr Phe Arg Ala Met Phe Cys Asn Asp His
        50   55   60
Arg Glu Ser Arg Glu Met Leu Val Glu Ile Asn Gly Ile Leu Ala Glu
65   70   75   80
Ala Met Glu Cys Phe Leu Gln Tyr Val Tyr Thr Gly Lys Val Lys Ile
                85   90   95
Thr Thr Glu Asn Val Gln Tyr Leu Phe Glu Thr Ser Ser Leu Phe Gln
                100   105   110
Ile Ser Val Leu Arg Asp Ala Cys Ala Lys Phe Leu Glu Glu Gln Leu
        115   120   125
Asp Pro Cys Asn Cys Leu Gly Ile Gln Arg Phe Ala Asp Thr His Ser
    130   135   140
Leu Lys Thr Leu Phe Thr Lys Cys Lys Asn Phe Ala Leu Gln Thr Phe
145   150   155   160
Glu Asp Val Ser Gln His Glu Glu Phe Leu Glu Leu Asp Lys Asp Glu
                165   170   175
Leu Ile Asp Tyr Ile Cys Ser Asp Glu Leu Val Ile Gly Lys Glu Glu
                180   185   190
Met Val Phe Glu Ala Val Met Arg Trp Val Tyr Arg Ala Val Asp Leu
                195   200   205
Arg Arg Pro Leu Leu His Glu Leu Leu Thr His Val Arg Leu Pro Leu
    210   215   220
Leu His Pro Asn Tyr Phe Val Gln Thr Val Glu Val Asp Gln Leu
225   230   235

<210> 4319
<211> 388
<212> DNA
<213> Homo sapiens

<400> 4319
nccatggaga aaagtattga tgctgtgatt gcaactgcct ctgcaccacc ttcttccagt
60

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ccaggccgta gccacagcaa ggaccgaacc ctgggaaaac cagacagcct tttagtgcct
120
gcagtcgcaa gtgactcttg caataatagc atctcactcc tatctgaaaa gttgacaagc
180
agctgttccc cccatcatat caagagaagt gtagtggaag ctatgcaacg ccaagctcgg
240
aaaatgtgca attacgacaa aatcttggcc acaaagaaaa acctagacca tgtcaataaa
300
atcttaaaag ccaaaaaact tcaaaggcag gccaggacag ggaataactt tgtgaaacgt
360
aggccaggtc gaccgcggtc ggagagag
388
```

<210> 4320
<211> 129
<212> PRT
<213> Homo sapiens

<400> 4320
```
Xaa Met Glu Lys Ser Ile Asp Ala Val Ile Ala Thr Ala Ser Ala Pro
 1               5                  10                  15
Pro Ser Ser Ser Pro Gly Arg Ser His Ser Lys Asp Arg Thr Leu Gly
             20                  25                  30
Lys Pro Asp Ser Leu Leu Val Pro Ala Val Ala Ser Asp Ser Cys Asn
         35                  40                  45
Asn Ser Ile Ser Leu Leu Ser Glu Lys Leu Thr Ser Ser Cys Ser Pro
     50                  55                  60
His His Ile Lys Arg Ser Val Val Glu Ala Met Gln Arg Gln Ala Arg
65                  70                  75                  80
Lys Met Cys Asn Tyr Asp Lys Ile Leu Ala Thr Lys Lys Asn Leu Asp
                 85                  90                  95
His Val Asn Lys Ile Leu Lys Ala Lys Lys Leu Gln Arg Gln Ala Arg
             100                 105                 110
Thr Gly Asn Asn Phe Val Lys Arg Arg Pro Gly Arg Pro Arg Ser Glu
         115                 120                 125
Arg
```

<210> 4321
<211> 278
<212> DNA
<213> Homo sapiens

<400> 4321
```
ngcccagaac ctgccacagt cccctgagaa caccgacctg caggttattc caggcagcca
60
gaccaggctc cttggtgaga agaccaccac agcggcaggg tccagccaca gcaggcccgg
120
cgtcccggtg gaaggcagcc ctgggcggaa cccaggcgtt taacggctca ctaggcagcc
180
ccagatctgg ggaacagatg agcacgtggg gagctggagt gagctgagca gaagttttgt
240
gcccgcctgc ccccatcccc tccaggccac gttttaga
278
```

<210> 4322
<211> 85
<212> PRT
<213> Homo sapiens

<400> 4322
Met Gly Ala Gly Gly His Lys Thr Ser Ala Gln Leu Thr Pro Ala Pro
1   5   10   15
His Val Leu Ile Cys Ser Pro Asp Leu Gly Leu Pro Ser Glu Pro Leu
                20   25   30
Asn Ala Trp Val Pro Pro Arg Ala Ala Phe His Arg Asp Ala Gly Pro
                35   40   45
Ala Val Ala Gly Pro Cys Arg Cys Gly Gly Leu Leu Thr Lys Glu Pro
        50   55   60
Gly Leu Ala Ala Trp Asn Asn Leu Gln Val Gly Val Leu Arg Gly Leu
65   70   75   80
Trp Gln Val Leu Gly
                85

<210> 4323
<211> 1542
<212> DNA
<213> Homo sapiens

<400> 4323
ngttacagta aagatggagc aaagtccttg aaaggagatg tgcctgcctc tgaggtgaca
60
ctgaaagact cgacattcag ccagtttagc ccgatctcca gtgctgaaga gtttgatgac
120
gacgagaaga ttgaggtgga tgaccccct gacaaggagg acatgcgatc aagcttcagg
180
tcgaatgtgt tgacggggtc ggctccccag caggactacg ataagctgaa ggcactcgga
240
ggggaaaact ccagcaaaac tggactctct acgtcaggca atgtggagaa aaacaaagct
300
gttaagagag aaacagaagc cagttctata aacctgagtg tttatgaacc ttttaaagtc
360
agaaaagcag.aggataaatt gaaggaaagc tctgacaagg tgctggaaaa cagagtccta
420
gatgggaagc tgagctccga gaagaatgac accagcctcc ccagcgttgc gccatcaaag
480
acaaagtcgt cctccaagct ctcgtcctgc atcgctgcca tcgcggctct cagcgctaaa
540
aaggcggctt cagactcctg caaagaacca gtggccaatt cgagggaatc ctccccgtta
600
ccaaaagaag taaatgacag tccgagagcc gctgacaagt ctcctgaatc ccagaatctc
660
atcgacggga ccaaaaaacc atccctgaag caaccggata gtcccagaag catctcaagt
720
gagaacagca gcaaaggatc cccgtcctct cccgcggggt ccacaccagc aatccccaaa
780
gtccgcataa aaaccattaa gacatcttct ggggaaatca agagaacagt gaccagggta
840

```
ttgccagaag tggatcttga ctctggaaag aaaccttccg agcagacagc gtccgtcatg
900
gcctctgtga catcccttct gtcgtctcca gcatcagccg ccgtcctttc ctctcccccc
960
agggcgcctc tccagtctgc ggtcgtgacc aatgcagttt cccctgcaga gctcaccccc
1020
aaacaggtca caatcaagcc tgtggctact gctttcctcc cagtgtctgc tgtgaagacg
1080
gcaggatccc aagtcattaa tttgaagctc gctaacaaca ccacggtgaa agccacggtc
1140
atatctgctg cctctgtcca gagtgccagc agcgccatca ttaaagctgc caacgccatc
1200
cagcagcaaa ctgtcgtggt gccggcatcc agcctggcca atgccaaact cgtgccaaag
1260
actgtgcacc ttgccaacct taaccttttg cctcagggtg cccaggccac ctctgaactc
1320
cgccaagtgc taaccaaacc tcagcaacaa ataaagcagg caataatcaa tgcagcagcc
1380
tcgcaacccc caaaaaggt gtctcgagtc caggtggtgt cgtccttgca gagttctgtg
1440
gtggaagctt tcaacaaggt gctgagcagt gtcaatccag tccctgttta catcccaaac
1500
ctcagtcctc ccgccaatgc agggatcacg ttaccgacgc gt
1542
```

<210> 4324
<211> 514
<212> PRT
<213> Homo sapiens

<400> 4324

```
Xaa Tyr Ser Lys Asp Gly Ala Lys Ser Leu Lys Gly Asp Val Pro Ala
1               5                   10                  15
Ser Glu Val Thr Leu Lys Asp Ser Thr Phe Ser Gln Phe Ser Pro Ile
            20                  25                  30
Ser Ser Ala Glu Glu Phe Asp Asp Asp Glu Lys Ile Glu Val Asp Asp
        35                  40                  45
Pro Pro Asp Lys Glu Asp Met Arg Ser Ser Phe Arg Ser Asn Val Leu
    50                  55                  60
Thr Gly Ser Ala Pro Gln Gln Asp Tyr Asp Lys Leu Lys Ala Leu Gly
65                  70                  75                  80
Gly Glu Asn Ser Ser Lys Thr Gly Leu Ser Thr Ser Gly Asn Val Glu
                85                  90                  95
Lys Asn Lys Ala Val Lys Arg Glu Thr Glu Ala Ser Ser Ile Asn Leu
            100                 105                 110
Ser Val Tyr Glu Pro Phe Lys Val Arg Lys Ala Glu Asp Lys Leu Lys
        115                 120                 125
Glu Ser Ser Asp Lys Val Leu Glu Asn Arg Val Leu Asp Gly Lys Leu
    130                 135                 140
Ser Ser Glu Lys Asn Asp Thr Ser Leu Pro Ser Val Ala Pro Ser Lys
145                 150                 155                 160
Thr Lys Ser Ser Ser Lys Leu Ser Ser Cys Ile Ala Ala Ile Ala Ala
                165                 170                 175
Leu Ser Ala Lys Lys Ala Ala Ser Asp Ser Cys Lys Glu Pro Val Ala
```

```
                    180                  185                  190
Asn Ser Arg Glu Ser Ser Pro Leu Pro Lys Glu Val Asn Asp Ser Pro
            195                  200                  205
Arg Ala Ala Asp Lys Ser Pro Glu Ser Gln Asn Leu Ile Asp Gly Thr
    210                  215                  220
Lys Lys Pro Ser Leu Lys Gln Pro Asp Ser Pro Arg Ser Ile Ser Ser
225                  230                  235                  240
Glu Asn Ser Ser Lys Gly Ser Pro Ser Ser Pro Ala Gly Ser Thr Pro
                245                  250                  255
Ala Ile Pro Lys Val Arg Ile Lys Thr Ile Lys Thr Ser Ser Gly Glu
            260                  265                  270
Ile Lys Arg Thr Val Thr Arg Val Leu Pro Glu Val Asp Leu Asp Ser
    275                  280                  285
Gly Lys Lys Pro Ser Glu Gln Thr Ala Ser Val Met Ala Ser Val Thr
    290                  295                  300
Ser Leu Leu Ser Ser Pro Ala Ser Ala Ala Val Leu Ser Ser Pro Pro
305                  310                  315                  320
Arg Ala Pro Leu Gln Ser Ala Val Val Thr Asn Ala Val Ser Pro Ala
                325                  330                  335
Glu Leu Thr Pro Lys Gln Val Thr Ile Lys Pro Val Ala Thr Ala Phe
            340                  345                  350
Leu Pro Val Ser Ala Val Lys Thr Ala Gly Ser Gln Val Ile Asn Leu
            355                  360                  365
Lys Leu Ala Asn Asn Thr Thr Val Lys Ala Thr Val Ile Ser Ala Ala
    370               --375-             380
Ser Val Gln Ser Ala Ser Ser Ala Ile Ile Lys Ala Ala Asn Ala Ile
385                  390                  395                  400
Gln Gln Gln Thr Val Val Val Pro Ala Ser Ser Leu Ala Asn Ala Lys
                405                  410                  415
Leu Val Pro Lys Thr Val His Leu Ala Asn Leu Asn Leu Leu Pro Gln
            420                  425                  430
Gly Ala Gln Ala Thr Ser Glu Leu Arg Gln Val Leu Thr Lys Pro Gln
            435                  440                  445
Gln Gln Ile Lys Gln Ala Ile Ile Asn Ala Ala Ala Ser Gln Pro Pro
    450                  455                  460
Lys Lys Val Ser Arg Val Gln Val Val Ser Ser Leu Gln Ser Ser Val
465                  470                  475                  480
Val Glu Ala Phe Asn Lys Val Leu Ser Ser Val Asn Pro Val Pro Val
                485                  490                  495
Tyr Ile Pro Asn Leu Ser Pro Pro Ala Asn Ala Gly Ile Thr Leu Pro
                500                  505                  510
Thr Arg
```

```
<210> 4325
<211> 1405
<212> DNA
<213> Homo sapiens

<400> 4325
acgcgtgccc ggggtctgct gtgcagcgca gcccgttgtg gtgatacgag ccggagatgc
60
cttctgcagg gactgtttca aggccttcta cgtccacaag ttcatagcca tgctgggcaa
120
```

gaaccggctc atctttccag gcgagaaggt agcgtctggg tcctgggggt ctgactgagc
180
agcctggccc ctcgaggtcc ctgcttgtcc ctcccacagg cagcctggcc tgctgcagcc
240
cgccagctcc tccttggcct ttgaggacag actcgatgtc ctagatgtcc acgaggtggg
300
gtgtctgcct gtgttggagg tgcggtgccc tgagtgatgt tttttctccc ccaggtgctc
360
ttggcgtggt ctggggggcc ttcgtccagc tccatggtct ggcaggttct tgagggcctg
420
agccaagatt ctgccaaaag actgcgcttt gtggcaggag tcatctttgt tgacgaggga
480
gcagcctgtg gccagagcct agaggagaga tcaaagaccc tggccgaagt gaagcccatt
540
ctgcaagcaa ctgggttccc atggcatgtg gtggccttag aggaggtgtt cagcctgcca
600
ccgtcggtgc tttggtgctc tgcccaggag ctggtgggat ccgaggggggc ctacaaggcg
660
gccgtggaca gcttcctcca gcagcagtat gtgctggggg ccggggggtgg tcctggcccg
720
actcaagggg aggaacagcc accccagccc ccgctggacc cccagaacct ggcaagaccg
780
cctgcccctg cccagactga ggctctttcc caactgttct gctcagtgag gacactgact
840
gccaaggagg agcttctgca gaccctgcgg acccacctga tcctccacat ggcccgagcc
900
cacggctact ccaaggtcat gactggggac agctgcacac gcttggctat caagctcatg
960
accaacctgg cgctgggtcg aggggccttc ctggcctggg atacgggctt ctcggatgag
1020
cggcacgggg acgtggtggt ggtgcggccc atgcgggacc acaccctgaa ggaggtcgct
1080
ttctacaacc gcctgttctc cgttccttct gtcttcacac cagccgtcga caccaaggcc
1140
cctgaaaagg ccagcatcca ccggctgatg gaggccttca tcctcaggct gcagacccag
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ttcccctcca ctgtcagcac tgtgtacagg tgtgtgtggg tgtgtgcggg gggtgcgcgg
1260
gtgtgtgctg tgtgcgggtg tgtgcgggtg gtgagctcac cactcgtgct caggccaggg
1320
cttagggtgg agccccagcc cgtgtgattc acctgctcct cccacaatcc ggccacagga
1380
caagtgagaa gcttgtgaag ggccc
1405

<210> 4326
<211> 336
<212> PRT
<213> Homo sapiens

<400> 4326
Met Phe Phe Leu Pro Gln Val Leu Leu Ala Trp Ser Gly Gly Pro Ser
1   5   10   15
Ser Ser Ser Met Val Trp Gln Val Leu Glu Gly Leu Ser Gln Asp Ser

```
                20                    25                    30
Ala Lys Arg Leu Arg Phe Val Ala Gly Val Ile Phe Val Asp Glu Gly
        35                    40                    45
Ala Ala Cys Gly Gln Ser Leu Glu Glu Arg Ser Lys Thr Leu Ala Glu
    50                    55                    60
Val Lys Pro Ile Leu Gln Ala Thr Gly Phe Pro Trp His Val Val Ala
65                    70                    75                    80
Leu Glu Glu Val Phe Ser Leu Pro Pro Ser Val Leu Trp Cys Ser Ala
                85                    90                    95
Gln Glu Leu Val Gly Ser Glu Gly Ala Tyr Lys Ala Ala Val Asp Ser
                100                   105                   110
Phe Leu Gln Gln Gln Tyr Val Leu Gly Ala Gly Gly Gly Pro Gly Pro
        115                   120                   125
Thr Gln Gly Glu Glu Gln Pro Pro Gln Pro Pro Leu Asp Pro Gln Asn
    130                   135                  140
Leu Ala Arg Pro Pro Ala Pro Ala Gln Thr Glu Ala Leu Ser Gln Leu
145                   150                   155                   160
Phe Cys Ser Val Arg Thr Leu Thr Ala Lys Glu Glu Leu Leu Gln Thr
                165                   170                   175
Leu Arg Thr His Leu Ile Leu His Met Ala Arg Ala His Gly Tyr Ser
                180                   185                   190
Lys Val Met Thr Gly Asp Ser Cys Thr Arg Leu Ala Ile Lys Leu Met
        195                   200                   205
Thr Asn Leu Ala Leu Gly Arg Gly Ala Phe Leu Ala Trp Asp Thr Gly
    210                   215                   220
Phe Ser Asp Glu Arg His Gly Asp Val Val Val Val Arg Pro Met Arg
225                   230                   235                   240
Asp His Thr Leu Lys Glu Val Ala Phe Tyr Asn Arg Leu Phe Ser Val
                245                   250                   255
Pro Ser Val Phe Thr Pro Ala Val Asp Thr Lys Ala Pro Glu Lys Ala
                260                   265                   270
Ser Ile His Arg Leu Met Glu Ala Phe Ile Leu Arg Leu Gln Thr Gln
        275                   280                   285
Phe Pro Ser Thr Val Ser Thr Val Tyr Arg Cys Val Trp Val Cys Ala
    290                   295                   300
Gly Gly Ala Arg Val Cys Ala Val Cys Gly Cys Val Arg Val Val Ser
305                   310                   315                   320
Ser Pro Leu Val Leu Arg Pro Gly Leu Arg Val Glu Pro Gln Pro Val
                325                   330                   335
```

<210> 4327
<211> 551
<212> DNA
<213> Homo sapiens

<400> 4327
tggccacagg cagagccgcc tctgcaggtg acacccaccc caggccgtgc accccacctc
60
caccctcgca ggccacccag acggcagctt ggggaaacct gggaggtccc gtaccctcac
120
tgtgcaggtg gggaaattta gaccctgaaa aagggatgcc ctgagatcac catgagattg
180
aggggcaagc agggctcacc ctgactggct cacttcccag gcacccccat gagcccaggc
240

```
accgcctgcc accctcactc tccaggaaga gccaccgcgt ggtggccggg atcgtgtggt
300
ggccagggcg tctgaccttg gctctcaccc ggaggccatc caggtgctga ggatggctaa
360
cgctaaggcc acacagccag ggagaggagg tggctcgtga caccacgatg ggacacaccc
420
acctctggga gaggagggtg actccgacag cccttgcctg ccaggatgga gcctggactc
480
tggagggcat cgtgtcctgg agcagcacca gcacctcctg ttgtcaccag gcgtggatgc
540
ccgcatcatg a
551
```

<210> 4328
<211> 107
<212> PRT
<213> Homo sapiens

<400> 4328

```
Met Pro Ser Arg Val Gln Ala Pro Ser Trp Gln Ala Arg Ala Val Gly
 1               5                  10                  15
Val Thr Leu Leu Ser Gln Arg Trp Val Cys Pro Ile Val Val Ser Arg
             20                  25                  30
Ala Thr Ser Ser Pro Trp Leu Cys Gly Leu Ser Val Ser His Pro Gln
         35                  40                  45
His Leu Asp Gly Leu Arg Val Arg Ala Lys Val Arg Arg Pro Gly His
     50                  55                  60
His Thr Ile Pro Ala Thr Thr Arg Trp Leu Phe Leu Glu Ser Glu Gly
 65                  70                  75                  80
Gly Arg Arg Cys Leu Gly Ser Trp Gly Cys Leu Gly Ser Glu Pro Val
             85                  90                  95
Arg Val Ser Pro Ala Cys Pro Ser Ile Ser Trp
             100                 105
```

<210> 4329
<211> 3192
<212> DNA
<213> Homo sapiens

<400> 4329

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cttaagactt tcaaagccca ataaaaatat atccaggagg gccagctaca atgagcccaa
60
gccagaggtc acctacatca gccagaaaat ctatgacctc tcagacagca agatttatct
120
tgtacctaaa actttggctc gaaagcgaat ctggaataaa aagtacccca tttgtatcga
180
gcttggtcag caagatgact ttatgtctaa agctcagact gataaggaga cttcagaaga
240
gaagccgcca gctggaggaa gggaggaccc ttagaagcca ccccgccctc aggaggaaca
300
agatctagcc agcgagatca gatactctat ctctttggga gaactggccg agaaaaagag
360
gaatggttta ggagatttat tctggcatct aagctaaagt cggaaatcaa gaagtcatcg
420
```

ggtgtctctg gaggtaaacc agggcttttg cctgcacaca gcagacacaa cagtccgtcc
480
gggcacctga cccacagccg cagcagcagc aaaggcagtg tggaggagat catgtcacag
540
ccaaagcaga aggagctggc aggcagcgtg cggcagaaga tgcttctcga ctacagcgtg
600
tacatgggca ggtgtgtccc ccaggaaagc cgaagccccc agaggagccc cctgcagagt
660
gcggagagca gccccacagc tgggaagaag ttgccagagg ttccaccctc tgaggaggaa
720
gaacaggaag cctgggtgaa tgccttgctt ggaagaatat tttgggactt cttaggagag
780
aaatactggt ctgatctggt gtctaagaag atccaaatga aactcagcaa aataaagctc
840
ccctacttta tgaatgagct cactctgacg gaacttgaca tgggcgtggc tgtgccaaaa
900
atcctccagg ccttcaagcc ttacgttgat caccaaggac tctggattga tttggaaatg
960
tcctacaatg ggtcctttct gatgactctc gagaccaaaa tgaatttgcc taaactaggt
1020
aaagagcctc ttgttgaagc cctgaaggtt ggagaaattg gcaaagaagg ttgcaggccc
1080
cgggcattct gtctggcgga cagcgatgag gaatcctcca gcgctggctc ctccgaggaa
1140
gacgatgccc cagagcccgc gggggagaca aacagctcct cccaggggga agggtacgtt
1200
ggaggtcatc gaacaagtaa gattatgagg tttgttgata aaattaccaa gtcaaaatat
1260
ttccaaaaag caacagagac agagtttata aaaaganaga tcgaagaagt ctccaacaca
1320
cccctgctgc tcactgttga agtacaagaa tgtagaggaa ccttggcggt caacattcca
1380
ccacccccga ctgaccgagt atggtatggt ttccgaaagc caccacatgt ggagctgaaa
1440
gctcggccaa aacttggaga gagagaagtg actttagttc atgtgacaga ctggatagag
1500
aagaaactgg agcaagagtt tcagaaagtt tttgtcatgc caaacatgga tgatgtttat
1560
atcactataa tgcactcagc catggaccct cgctctactt cctgcctcct gaaagaccca
1620
cctgtggagg ctgctgatcg gccatgatgg gtgatgtcag atgttcccca tattgtgaca
1680
tcgagctgga tgtgtggggt tcttggccgc catctgtact gtagcactgg cctctgtgcc
1740
acagctactg tttcttaaag gactgcttct gccctctgcc tgccagtgcc cattccactg
1800
tgaggtgtca ttccctgcat ctagtgacaa ctgtctggat tgcctgctgc aaagctttga
1860
tttggcaaag gagaccatgg aagaatcatg gtggatccag aagttatacg tgacccacac
1920
catggctttt aaaagtctac ccatgtttgt ggcagcaaat gagcacagta agagcaaagc
1980
tgaacaactt gcctcctcta ctcctccaaa gcttttcttc aggcagccgg tgcacagtgg
2040

```
actttttcac ttctatactt tgtatgcggc cttccacact tccagagaat gtcagtgtgc
2100
aatgtgtctg gagggtgggg agaggaattc tgtgagcctt ttcatttcgg tgacagaaga
2160
gatgggcaga gcaacttatt ttccacatta aattgtgcat ttgggaagca agtagccata
2220
gtacacacac aacacgctat cagcttgggt aaggacagtg ggatttatgt gaacatcagg
2280
caaagccatg agatcaaacc atcccaagcc tttcaccaat gaggtacaac cacctggggg
2340
ctagctaatc ttgaatgttt tcctgagaca ggagcgtatg tgaaaacatc aaacactgca
2400
catgacagga tgggtcctct catacagatg ggatggggtt agaaagccag agccagtttt
2460
tccatctggc gtttcctgtg tcctccaggt ttatatggga atcgaaacag tttgttaatc
2520
tgattgggag agttccatgg gcagatttcc cttcctgaag gccaaaacgg agaactgctc
2580
tctttaatta tttcaagagt caagaccaaa agtttgctca gcatcacact acatctcaaa
2640
attaatgttg ccaacttaat tttgtgcatt tgtgtcagaa tgtttagttt acaaggttgg
2700
gggctctctt tgcttcgaga agtaaaccta ataccatttt tttattgttt aaagctgcat
2760
tcaacgtcaa aattaccttg ggtaactttt gataacttac atgtgtggac aaagctaata
2820
gtggtttttt aaacagcacc ttgcctgaac atgactttaa agaaattaat atattgaaaa
2880
catgtttgaa cccttatttt aattgcacca ttaaaacatt tgacttaaat tgtttgacca
2940
ttccagttgg tgtactgttc tgatttttcg ttgtgtaggc cgatctgcct gtcagagtcc
3000
acgtgtcctg gtcactggtc tttataattg ttgtgcaata actaaaggct aaggactaga
3060
tgcactatcg tgtaaagaga ttacacatga ctgtaccatg ttgcacttaa tcaaatagta
3120
tgtggggatt taaaatcgct tgcattgttt cacaaaataa atatctcaat gtcaaatact
3180
aaaaaaaaaa aa
3192


<210> 4330
<211> 371
<212> PRT
<213> Homo sapiens


<400> 4330
Met Ser Gln Pro Lys Gln Lys Glu Leu Ala Gly Ser Val Arg Gln Lys
1               5                   10                  15
Met Leu Leu Asp Tyr Ser Val Tyr Met Gly Arg Cys Val Pro Gln Glu
                20                  25                  30
Ser Arg Ser Pro Gln Arg Ser Pro Leu Gln Ser Ala Glu Ser Ser Pro
            35                  40                  45
Thr Ala Gly Lys Lys Leu Pro Glu Val Pro Pro Ser Glu Glu Glu Glu
```

```
      50                    55                    60
Gln Glu Ala Trp Val Asn Ala Leu Leu Gly Arg Ile Phe Trp Asp Phe
65                    70                    75                    80
Leu Gly Glu Lys Tyr Trp Ser Asp Leu Val Ser Lys Lys Ile Gln Met
                  85                    90                    95
Lys Leu Ser Lys Ile Lys Leu Pro Tyr Phe Met Asn Glu Leu Thr Leu
              100                   105                   110
Thr Glu Leu Asp Met Gly Val Ala Val Pro Lys Ile Leu Gln Ala Phe
              115                   120                   125
Lys Pro Tyr Val Asp His Gln Gly Leu Trp Ile Asp Leu Glu Met Ser
          130                   135                   140
Tyr Asn Gly Ser Phe Leu Met Thr Leu Glu Thr Lys Met Asn Leu Pro
145                   150                   155                   160
Lys Leu Gly Lys Glu Pro Leu Val Glu Ala Leu Lys Val Gly Glu Ile
                  165                   170                   175
Gly Lys Glu Gly Cys Arg Pro Arg Ala Phe Cys Leu Ala Asp Ser Asp
                  180                   185                   190
Glu Glu Ser Ser Ser Ala Gly Ser Ser Glu Glu Asp Asp Ala Pro Glu
              195                   200                   205
Pro Ala Gly Glu Thr Asn Ser Ser Ser Gln Gly Glu Gly Tyr Val Gly
          210                   215                   220
Gly His Arg Thr Ser Lys Ile Met Arg Phe Val Asp Lys Ile Thr Lys
225                   230                   235                   240
Ser Lys Tyr Phe Gln Lys Ala Thr Glu Thr Glu Phe Ile Lys Arg Xaa
                  245                   250                   255
Ile Glu Glu Val Ser Asn Thr Pro Leu Leu Leu Thr Val Glu Val Gln
                  260                   265                   270
Glu Cys Arg Gly Thr Leu Ala Val Asn Ile Pro Pro Pro Pro Thr Asp
          275                   280                   285
Arg Val Trp Tyr Gly Phe Arg Lys Pro Pro His Val Glu Leu Lys Ala
      290                   295                   300
Arg Pro Lys Leu Gly Glu Arg Glu Val Thr Leu Val His Val Thr Asp
305                   310                   315                   320
Trp Ile Glu Lys Lys Leu Glu Gln Glu Phe Gln Lys Val Phe Val Met
                  325                   330                   335
Pro Asn Met Asp Asp Val Tyr Ile Thr Ile Met His Ser Ala Met Asp
              340                   345                   350
Pro Arg Ser Thr Ser Cys Leu Leu Lys Asp Pro Pro Val Glu Ala Ala
          355                   360                   365
Asp Arg Pro
      370
```

```
<400> 4331
gaaaaatatt ttaaccataa ggctcttcag cttcttcact gtttccctct ggacatacga
60
ttaaaagatg gcagtttatt ttggcagtca ccaaagaggc caccctctcc aataaaattt
120
gatttaaatg agcctttgca cctcagtttc cttcagaatg ctgcaaaact atatgctaca
180
```

gtatattgta ttccatttgc agaagaggac ttatcagcag atgccctctt gaatattctt
240
tcagaagtaa agattcagga attcaagcct tccaataagg ttgttcaaac agatgaaact
300
gcaaggaaac cagaccatgt tcctattagc agtgaagatg agaggaatgc aattttccaa
360
ctagaaaagg ctattttatc taatgaagcc accaaaagtg accttcagat ggcagtgctt
420
tcatttgaaa aagatgatga tcataatgga cacatagatt tcatcacagc tgcatcaaat
480
cttcgtgcca aaatgtacag cattgaacca gctgaccgtt tcaaaacaaa gcgcatagct
540
ggtaaaatta tacctgctat agcaacaacc actgctacag tttctggctt ggttgccttg
600
gagatgatca aagtaactgg tggctatcca tttgaagctt acaaaaattg ttttcttaac
660
ttagccattc caattgtagt atttacagag acaactgaag taaggaaaac taaaatcaga
720
aatggaatat catttacaat ttgggatcga tggaccgtac atggaaaaga agatttcacc
780
ctcttggatt tcataaatgc agtcaaagag aagtatggaa ttgagccaac aatggtggta
840
cagggagtca aaatgcttta tgttcctgta atgcctggtc atgcaaaaag attgaagtta
900
acaatgcata aacttgtaaa acctactact gaaaagaaat atgtggatct tactgtgtca
960
tttgctccag acattgatgg agatgaagat ttgccgggac ctccagtaag atactacttc
1020
agtcatgaca ctgattaata caagttgtct taacgttact ccaggaccac ttgattttgg
1080
aaagagtgca cttaattcag aagctaaaga aaatcagttc ataatactat ggatttctct
1140
ttcattaagc cttaatttta agggaaacat cagtaagaaa ctgcactgaa gaattataaa
1200
acattttggg gcatagcata cacttgtcta acggttcaca cgtggctatg atcacaagca
1260
actttgaact ggaatgctat ttataaaagt tttgtgtatt aatctgtgta ttaatctctc
1320
tggataaaaa gaaggaaaaa atatgtatga ccggt
1355

<210> 4332
<211> 345
<212> PRT
<213> Homo sapiens

<400> 4332
Glu Lys Tyr Phe Asn His Lys Ala Leu Gln Leu Leu His Cys Phe Pro
1   5   10   15
Leu Asp Ile Arg Leu Lys Asp Gly Ser Leu Phe Trp Gln Ser Pro Lys
            20   25   30
Arg Pro Pro Ser Pro Ile Lys Phe Asp Leu Asn Glu Pro Leu His Leu
        35   40   45
Ser Phe Leu Gln Asn Ala Ala Lys Leu Tyr Ala Thr Val Tyr Cys Ile

```
         50                    55                    60
Pro Phe Ala Glu Glu Asp Leu Ser Ala Asp Ala Leu Leu Asn Ile Leu
65                    70                    75                    80
Ser Glu Val Lys Ile Gln Glu Phe Lys Pro Ser Asn Lys Val Val Gln
                    85                    90                    95
Thr Asp Glu Thr Ala Arg Lys Pro Asp His Val Pro Ile Ser Ser Glu
                    100                   105                   110
Asp Glu Arg Asn Ala Ile Phe Gln Leu Glu Lys Ala Ile Leu Ser Asn
            115                   120                   125
Glu Ala Thr Lys Ser Asp Leu Gln Met Ala Val Leu Ser Phe Glu Lys
        130                   135                   140
Asp Asp Asp His Asn Gly His Ile Asp Phe Ile Thr Ala Ala Ser Asn
145                   150                   155                   160
Leu Arg Ala Lys Met Tyr Ser Ile Glu Pro Ala Asp Arg Phe Lys Thr
                165                   170                   175
Lys Arg Ile Ala Gly Lys Ile Ile Pro Ala Ile Ala Thr Thr Thr Ala
            180                   185                   190
Thr Val Ser Gly Leu Val Ala Leu Glu Met Ile Lys Val Thr Gly Gly
        195                   200                   205
Tyr Pro Phe Glu Ala Tyr Lys Asn Cys Phe Leu Asn Leu Ala Ile Pro
    210                   215                   220
Ile Val Val Phe Thr Glu Thr Thr Glu Val Arg Lys Thr Lys Ile Arg
225                   230                   235                   240
Asn Gly Ile Ser Phe Thr Ile Trp Asp Arg Trp Thr Val His Gly Lys
                245                   250                   255
Glu Asp Phe Thr Leu Leu Asp Phe Ile Asn Ala Val Lys Glu Lys Tyr
            260                   265                   270
Gly Ile Glu Pro Thr Met Val Val Gln Gly Val Lys Met Leu Tyr Val
        275                   280                   285
Pro Val Met Pro Gly His Ala Lys Arg Leu Lys Leu Thr Met His Lys
    290                   295                   300
Leu Val Lys Pro Thr Thr Glu Lys Lys Tyr Val Asp Leu Thr Val Ser
305                   310                   315                   320
Phe Ala Pro Asp Ile Asp Gly Asp Glu Asp Leu Pro Gly Pro Pro Val
                325                   330                   335
Arg Tyr Tyr Phe Ser His Asp Thr Asp
                340                   345
```

```
<210> 4333
<211> 1278
<212> DNA
<213> Homo sapiens
```

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<400> 4333
cggccgcagc gccgtctgct cagcgcccgg gtcaatagga gccagtcctt cgcaggcgtc
60
ctcggcagcc acgagcgggg gcccaggagt ttcccggtct tcagcccgcc ggggcccca
120
cggaagcccc ccgcgctctc ccgagtgtcc aggatgtttt ccgtggctca cccagccgcc
180
aaggtgccgc agcccgagcg gctggacctg gtgtacacgg cgctgaagcg gggcctgacg
240
gcctacttgg aagtgcacca gcaggagcaa gagaaactcc aggggcagat aagggagtcc
300
```

aagaggaatt cccgcttggg cttcctgtat gatctggaca agcaagtcaa gtccattgaa
360
cgcttcctgc gacgactgga gttccatgcc agcaagatcg atgagctgta tgaggcatac
420
tgtgtccagc ggcgtctccg ggatggtgcc tacaacatgg tccgtgccta caccactggg
480
tccccgggaa gccgagaggc ccgggacagc ctggcagagg ccactcgggg gcatcgcgag
540
tacacggagg taggggatgg gggcccatga agcagaggca cagggtgtgg cagggctagt
600
ggctggccct tgaccccctc ctgtccctgc ccctccctcc caagcatgtg tctgctggag
660
agcgagctgg aggcacagct gggcgagttt catctccgaa tgaaagggct ggctggcttc
720
gccaggctgt gtgtaggcga tcagtatgag atctgcatga aatatgggcg tcagcgctgg
780
aaactacggg gccgaattga gggtagtgga aagcaggtgt gggacagtga agaaaccatc
840
tttctccctc tactcacgga atttctgtct attaaggtga cagaactgaa gggcctggcc
900
aaccatgtgg ttgtgggcag tgtctcctgt gagaccaagg acctgtttgc cgccctgccc
960
caggttgtgg ctgtggatat caatgacctt ggtaccatca agctcagcct ggaagtcaca
1020
tggagcccct tcgacaagga tgaccagccc tcagctgctt cttctgtcaa caaggcctcc
1080
acagtcacca agcgcttctc cacctatagc cagagcccac cggacacacc ctcacttcgg
1140
gaacaggctt tctataacat gctgcgacgg caggaggagc tggagaatgg gacagcatgg
1200
tccctgtcat ctgaatcttc agacgactca tccagcccac agctctcagg cactgcccgc
1260
cactcaccag cccctagg
1278

<210> 4334
<211> 189
<212> PRT
<213> Homo sapiens

<400> 4334
Arg Pro Gln Arg Arg Leu Leu Ser Ala Arg Val Asn Arg Ser Gln Ser
1   5   10   15
Phe Ala Gly Val Leu Gly Ser His Glu Arg Gly Pro Arg Ser Phe Pro
            20   25   30
Val Phe Ser Pro Pro Gly Pro Pro Arg Lys Pro Pro Ala Leu Ser Arg
            35   40   45
Val Ser Arg Met Phe Ser Val Ala His Pro Ala Ala Lys Val Pro Gln
        50   55   60
Pro Glu Arg Leu Asp Leu Val Tyr Thr Ala Leu Lys Arg Gly Leu Thr
65   70   75   80
Ala Tyr Leu Glu Val His Gln Gln Glu Gln Glu Lys Leu Gln Gly Gln
                85   90   95
Ile Arg Glu Ser Lys Arg Asn Ser Arg Leu Gly Phe Leu Tyr Asp Leu

```
              100                  105                  110
Asp Lys Gln Val Lys Ser Ile Glu Arg Phe Leu Arg Arg Leu Glu Phe
          115                  120                  125
His Ala Ser Lys Ile Asp Glu Leu Tyr Glu Ala Tyr Cys Val Gln Arg
      130                  135                  140
Arg Leu Arg Asp Gly Ala Tyr Asn Met Val Arg Ala Tyr Thr Thr Gly
145                  150                  155                  160
Ser Pro Gly Ser Arg Glu Ala Arg Asp Ser Leu Ala Glu Ala Thr Arg
              165                  170                  175
Gly His Arg Glu Tyr Thr Glu Val Gly Asp Gly Gly Pro
          180                  185
```

<210> 4335
<211> 1211
<212> DNA
<213> Homo sapiens

<400> 4335
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cacaacctgg acaagcgcag tgctcactag tgggagagga agggccaaga tctggctggg
60
gatggggagg agtggcttcc cccacttaaa acatttgtgc cctctgtatc cccattccag
120
ctggccttgg gtgcggcact cgtgaatgta cagatccccc tgctcctggg ccagctggta
180
gaggtcgtgg ccaagtacac aagggaccac gtagggagtt tcatgactga gtctcagaat
240
ctcagcaccc acctgcttat cctctatggt gtccagggac tgctgacctt cgggtacctg
300
gtgctgctgt cccacgttgg cgagcgcatg gctgtggaca tgcggagggc cctcttcagc
360
tccctgctcc acaagacat caccttcttt gacgccaata agacagggca gctggtgagc
420
cgcttgacaa ctgacgtgca ggagtttaag tcatccttca gcttgtcat ctcccagggg
480
ctgcgaagct gcacccaggt ggcaggctgc ctggtgtccc tgtccatgct gtcgacacgc
540
ctcacgctgc tgctgatggt ggccacacca gccctgatgg gagtgggcac cctgatgggc
600
tcaggcctcc gaaaattgtc tcgccagtgt caggagcaga tcgccagggc aatgggcgta
660
gcagacgagg ccctgggcaa tgtgcggact gtgcgtgcct tcgccatgga gcaacgggaa
720
gaggagcgct atggggcaga gctggaagcc tgccgctgcc gggcagagga gctgggccgc
780
ggcatcgcct tgttccaagg gctttccaac atcgccttca actgcatggt cttgggtacc
840
ctatttattg ggggctccct tgtggccgga cagcagctga caggggggaga cctcatgtcc
900
ttcctggtgg cctcccagac agtgcaaagc ttcctccgtg ttgcaccctg tccgaattcc
960
cttccgctgc aggctgtgac actccatgca tggaaggacc atccttgaca ggctgtgtga
1020
gctgcccttc cccatgcctg ccacttccag ggatgacaag ctgaccccctg tccccacaca
1080
```

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ccccaccctt atagcttatt gctttgcgtt ggtccaaaac cacccgctca gctgagcctc
1140
tgggatgacc agagctgatc accagacagc tcaaggcggg cctccccca gaggctggag
1200
tgtgctcgcg a
1211
```

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<210> 4336
<211> 325
<212> PRT
<213> Homo sapiens

<400> 4336
Trp Glu Arg Lys Gly Gln Asp Leu Ala Gly Asp Gly Glu Glu Trp Leu
 1               5                   10                  15
Pro Pro Leu Lys Thr Phe Val Pro Ser Val Ser Pro Phe Gln Leu Ala
                20                  25                  30
Leu Gly Ala Ala Leu Val Asn Val Gln Ile Pro Leu Leu Leu Gly Gln
                35                  40                  45
Leu Val Glu Val Val Ala Lys Tyr Thr Arg Asp His Val Gly Ser Phe
        50                  55                  60
Met Thr Glu Ser Gln Asn Leu Ser Thr His Leu Leu Ile Leu Tyr Gly
65                  70                  75                  80
Val Gln Gly Leu Leu Thr Phe Gly Tyr Leu Val Leu Leu Ser His Val
                85                  90                  95
Gly Glu Arg Met Ala Val Asp Met Arg Arg Ala Leu Phe Ser Ser Leu
                100                 105                 110
Leu Arg Gln Asp Ile Thr Phe Phe Asp Ala Asn Lys Thr Gly Gln Leu
            115                 120                 125
Val Ser Arg Leu Thr Thr Asp Val Gln Glu Phe Lys Ser Ser Phe Lys
        130                 135                 140
Leu Val Ile Ser Gln Gly Leu Arg Ser Cys Thr Gln Val Ala Gly Cys
145                 150                 155                 160
Leu Val Ser Leu Ser Met Leu Ser Thr Arg Leu Thr Leu Leu Leu Met
                165                 170                 175
Val Ala Thr Pro Ala Leu Met Gly Val Gly Thr Leu Met Gly Ser Gly
                180                 185                 190
Leu Arg Lys Leu Ser Arg Gln Cys Gln Glu Gln Ile Ala Arg Ala Met
            195                 200                 205
Gly Val Ala Asp Glu Ala Leu Gly Asn Val Arg Thr Val Arg Ala Phe
        210                 215                 220
Ala Met Glu Gln Arg Glu Glu Glu Arg Tyr Gly Ala Glu Leu Glu Ala
225                 230                 235                 240
Cys Arg Cys Arg Ala Glu Glu Leu Gly Arg Gly Ile Ala Leu Phe Gln
                245                 250                 255
Gly Leu Ser Asn Ile Ala Phe Asn Cys Met Val Leu Gly Thr Leu Phe
                260                 265                 270
Ile Gly Gly Ser Leu Val Ala Gly Gln Gln Leu Thr Gly Gly Asp Leu
            275                 280                 285
Met Ser Phe Leu Val Ala Ser Gln Thr Val Gln Ser Phe Leu Arg Val
        290                 295                 300
Ala Pro Cys Pro Asn Ser Leu Pro Leu Gln Ala Val Thr Leu His Ala
305                 310                 315                 320
Trp Lys Asp His Pro
```

325

<210> 4337
<211> 461
<212> DNA
<213> Homo sapiens

<400> 4337
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<210> 4338
<211> 118
<212> PRT
<213> Homo sapiens

<400> 4338
Met Asn Leu Thr Phe Ser Gln Pro Gly Ser Val Cys Ala Thr Trp Glu
1   5   10   15
Ala Ser Ser Ala Pro Gly Asp Pro Ser Leu Gly Val Gly Arg Thr Ser
            20   25   30
Thr Trp Phe Pro Ser Ser Gly Ala His Gly Gly Glu Val Glu Gly Gly
            35   40   45
Arg Arg Glu Gly Ala Thr Cys Cys Ser Val Glu Lys Gln Gln Ser Pro
        50   55   60
Leu Gln Pro Ala Gln Leu Ala Phe Leu Thr Leu Ser Leu Pro Gly Leu
65   70   75   80
Cys Gly Arg Glu Gly Gln Ala Arg Trp Pro Ala Arg Asp Val Val Phe
                85   90   95
Ser Phe Val Leu Cys Thr Met Pro Gln Lys Asn Ile Leu Leu Ile Cys
                100   105   110
Asn Gln Asp Asn Ile Ile
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<210> 4339
<211> 5269
<212> DNA
<213> Homo sapiens

<400> 4339

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3240
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<210> 4340
<211> 1088
<212> PRT
<213> Homo sapiens


<400> 4340
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                20                  25                  30
Gly Pro Glu Pro Glu Arg Pro Ser Pro Gly Asp Gly Asn Pro Arg Glu
                35                  40                  45
Asn Ser Pro Phe Leu Asn Asn Val Glu Val Glu Gln Glu Ser Phe Phe
            50                  55                  60
Glu Gly Lys Asn Met Ala Leu Phe Glu Glu Glu Met Asp Ser Asn Pro
65                  70                  75                  80
Met Val Ser Ser Leu Leu Asn Lys Leu Ala Asn Tyr Thr Asn Leu Ser
                85                  90                  95
Gln Gly Val Val Glu His Glu Glu Asp Glu Glu Ser Arg Arg Arg Glu
                100                 105                 110
Ala Lys Ala Pro Arg Met Gly Thr Phe Ile Gly Val Tyr Leu Pro Cys
            115                 120                 125
Leu Gln Asn Ile Leu Gly Val Ile Leu Phe Leu Arg Leu Thr Trp Ile
            130                 135                 140
Val Gly Val Ala Gly Val Leu Glu Ser Phe Leu Ile Val Ala Met Cys
145                 150                 155                 160
Cys Thr Cys Thr Met Leu Thr Ala Ile Ser Met Ser Ala Ile Ala Thr
                165                 170                 175
Asn Gly Val Val Pro Ala Gly Gly Ser Tyr Tyr Met Ile Ser Arg Ser
                180                 185                 190
Leu Gly Pro Glu Phe Gly Gly Ala Val Gly Leu Cys Phe Tyr Leu Gly
            195                 200                 205
Thr Thr Phe Ala Gly Ala Met Tyr Ile Leu Gly Thr Ile Glu Ile Phe
            210                 215                 220
Leu Thr Tyr Ile Ser Pro Gly Ala Ala Ile Phe Gln Ala Glu Ala Ala
225                 230                 235                 240
Gly Gly Glu Ala Ala Ala Met Leu His Asn Met Arg Val Tyr Gly Thr
                245                 250                 255
Cys Thr Leu Val Leu Met Ala Leu Val Val Phe Val Gly Val Lys Tyr
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3534

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                 260                         265                         270
Val Asn Lys Leu Ala Leu Val Phe Leu Ala Cys Val Val Leu Ser Ile
        275                         280                         285
Leu Ala Ile Tyr Ala Gly Val Ile Lys Ser Ala Phe Asp Pro Pro Asp
        290                         295                         300
Ile Pro Val Cys Leu Leu Gly Asn Arg Thr Leu Ser Arg Arg Ser Phe
305                         310                         315                         320
Asp Ala Cys Val Lys Ala Tyr Gly Ile His Asn Asn Ser Ala Thr Ser
                325                         330                         335
Ala Leu Trp Gly Leu Phe Cys Asn Gly Ser Gln Pro Ser Ala Ala Cys
            340                         345                         350
Asp Glu Tyr Phe Ile Gln Asn Asn Val Thr Glu Ile Gln Gly Ile Pro
        355                         360                         365
Gly Ala Ala Ser Gly Val Phe Leu Glu Asn Leu Trp Ser Thr Tyr Ala
        370                         375                         380
His Ala Gly Ala Phe Val Glu Lys Lys Gly Val Pro Ser Val Pro Val
385                         390                         395                         400
Ala Glu Glu Ser Arg Ala Ser Ala Leu Pro Tyr Val Leu Thr Asp Ile
                405                         410                         415
Ala Ala Ser Phe Thr Leu Leu Val Gly Ile Tyr Phe Pro Ser Val Thr
    .   ..      420                         425                         430
Gly Ile Met Ala Gly Ser Asn Arg Ser Gly Asp Leu Lys Asp Ala Gln
            435                         440                         445
Lys Ser Ile Pro Thr Gly Thr Ile Leu Ala Ile Val Thr Thr Ser Phe
        450                         455                         460
Ile Tyr Leu Ser Cys Ile Val Leu Phe Gly Ala Cys Ile Glu Gly Val
465                         470                         475                         480
Val Leu Arg Asp Lys Phe Gly Glu Ala Leu Gln Gly Asn Leu Val Ile
                485                         490                         495
Gly Met Leu Ala Trp Pro Ser Pro Trp Val Ile Val Ile Gly Ser Phe
            500                         505                         510
Phe Ser Thr Cys Gly Ala Gly Leu Gln Thr Leu Thr Gly Ala Pro Arg
        515                         520                         525
Leu Leu Gln Ala Ile Ala Arg Asp Gly Ile Val Pro Phe Leu Gln Val
        530                         535                         540
Phe Gly His Gly Lys Ala Asn Gly Glu Pro Thr Trp Ala Leu Leu Leu
545                         550                         555                         560
Thr Val Leu Ile Cys Glu Thr Gly Ile Leu Ile Ala Ser Leu Asp Ser
                565                         570                         575
Val Ala Pro Ile Leu Ser Met Phe Phe Leu Met Cys Tyr Leu Phe Val
            580                         585                         590
Asn Leu Ala Cys Ala Val Gln Thr Leu Leu Arg Thr Pro Asn Trp Arg
            595                         600                         605
Pro Arg Phe Lys Phe Tyr His Trp Thr Leu Ser Phe Leu Gly Met Ser
    610                         615                         620
Leu Cys Leu Ala Leu Met Phe Ile Cys Ser Trp Tyr Tyr Ala Leu Ser
625                         630                         635                         640
Ala Met Leu Ile Ala Gly Cys Ile Tyr Lys Tyr Ile Glu Tyr Arg Gly
                645                         650                         655
Ala Glu Lys Glu Trp Gly Asp Gly Ile Arg Gly Leu Ser Leu Asn Ala
            660                         665                         670
Ala Arg Tyr Ala Leu Leu Arg Val Glu His Gly Pro Pro His Thr Lys
        675                         680                         685
Asn Trp Arg Pro Gln Val Leu Val Met Leu Asn Leu Asp Ala Glu Gln
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Ala Val Lys His Pro Arg Leu Leu Ser Phe Thr Ser Gln Leu Lys Ala
705                    710                    715                    720
Gly Lys Gly Leu Thr Ile Val Gly Ser Val Leu Glu Gly Thr Tyr Leu
                      725                    730                    735
Asp Lys His Met Glu Ala Gln Arg Ala Glu Glu Asn Ile Arg Ser Leu
                      740                    745                    750
Met Ser Thr Glu Lys Thr Lys Gly Phe Cys Gln Leu Val Val Ser Ser
                      755                    760                    765
Ser Leu Arg Asp Gly Met Ser His Leu Ile Gln Ser Ala Gly Leu Gly
                      770                    775                    780
Gly Leu Lys His Asn Thr Val Leu Met Ala Trp Pro Ala Ser Trp Lys
785                    790                    795                    800
Gln Glu Asp Asn Pro Phe Ser Trp Lys Asn Phe Val Asp Thr Val Arg
                      805                    810                    815
Asp Thr Thr Ala Ala His Gln Ala Leu Leu Val Ala Lys Asn Val Asp
                      820                    825                    830
Ser Phe Pro Gln Asn Gln Glu Arg Phe Gly Gly Gly His Ile Asp Val
                      835                    840                    845
Trp Trp Ile Val His Asp Gly Gly Met Leu Met Leu Leu Pro Phe Leu
                      850                    855                    860
Leu Arg Gln His Lys Val Trp Arg Lys Cys Arg Met Arg Ile Phe Thr
865                    870                    875                    880
Val Ala Gln Val Asp Asp Asn Ser Ile Gln Met Lys Lys Asp Leu Gln
                      885                    890                    895
Met Phe Leu Tyr His Leu Arg Ile Ser Ala Glu Val Glu Val Val Glu
                      900                    905                    910
Met Val Glu Asn Asp Ile Ser Ala Phe Thr Tyr Glu Arg Thr Leu Met
                      915                    920                    925
Met Glu Gln Arg Ser Gln Met Leu Lys Gln Met Gln Leu Ser Lys Asn
                      930                    935                    940
Glu Gln Glu Arg Glu Ala Gln Leu Ile His Asp Arg Asn Thr Ala Ser
945                    950                    955                    960
His Thr Ala Ala Ala Ala Arg Thr Gln Ala Pro Pro Thr Pro Asp Lys
                      965                    970                    975
Val Gln Met Thr Trp Thr Arg Glu Lys Leu Ile Ala Glu Lys Tyr Arg
                      980                    985                    990
Ser Arg Asp Thr Ser Leu Ser Gly Phe Lys Asp Leu Phe Ser Met Lys
                      995                    1000                   1005
Pro Glu Trp Gly Asn Leu Asp Gln Ser Asn Val Arg Arg Met His Thr
                      1010                   1015                   1020
Ala Val Lys Leu Asn Gly Val Val Leu Asn Lys Ser Gln Asp Ala Gln
1025                   1030                   1035                   1040
Leu Val Leu Leu Asn Met Pro Gly Pro Lys Asn Arg Gln Gly Asp
                      1045                   1050                   1055
Glu Asn Tyr Met Glu Phe Leu Glu Val Leu Thr Glu Gly Leu Asn Arg
                      1060                   1065                   1070
Val Leu Leu Val Arg Gly Gly Gly Arg Glu Val Ile Thr Ile Tyr Ser
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<210> 4341
<211> 693
<212> DNA
<213> Homo sapiens

<400> 4341
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120
gacctgaggg agccatatgc atcaagtgag tgtttctcca taacagaata tttataagag
180
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240
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<210> 4342
<211> 103
<212> PRT
<213> Homo sapiens

<400> 4342
Met Val Arg Leu Leu Lys Arg Lys Val Gln His Lys Asp Pro Pro Glu
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Arg Gly Gln Ser Ser Arg Gly Trp Asn Ala Ser Leu Gly Leu Gly Glu
                20   25   30
Lys Glu Gly Leu Val Ser Val Gly Ile Thr Gln Lys Arg Ala Leu Tyr
            35   40   45
Met Phe Ser Tyr Lys Tyr Ser Val Met Glu Lys His Ser Leu Asp Ala
        50   55   60
Tyr Gly Ser Leu Arg Ser Phe Phe Phe His Pro Leu Phe Leu Glu Lys
65   70   75   80
Lys Phe Phe Lys Ala Tyr Asn Leu Lys Ser Thr Ser Thr Tyr Ser Arg
                85   90   95
Asn Ile Val Ala Phe Ser Ile
                100

<210> 4343
<211> 499
<212> DNA
<213> Homo sapiens

<400> 4343

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120
ttcagaacag ggcgcccgac gttgggcgcg tggacagagt cctccggcgg ccgcgccgct
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360
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480
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499

<210> 4344
<211> 118
<212> PRT
<213> Homo sapiens

<400> 4344-
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Arg Val Val Arg Gly Arg Gly Pro Phe Ala Phe Arg Thr Gly Arg Pro
            20   25   30
Thr Leu Gly Ala Trp Thr Glu Ser Ser Gly Gly Arg Ala Ala Gly Pro
        35   40   45
Gly Gly Glu Arg Arg Thr Asp Phe Arg Gly Gly Pro Gly His Ala Ala
    50   55   60
Glu Thr Thr Arg Leu Pro Gly Gly Gly Gln Asp Arg Pro Cys Pro Asp
65   70   75   80
Lys Met Glu Phe Pro Val Trp Leu Gln Leu Ala Ala Arg Ser Gln Ser
                85   90   95
Ser Ser Val Ile Arg Leu Ser Asp Cys Ser Pro Phe Ile Ser Phe Ala
                100   105   110
Val Val Gln Ile Leu Ile
            115

<210> 4345
<211> 349
<212> DNA
<213> Homo sapiens

<400> 4345
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120
cgtctgcatg agcagaagct ggtgcagcat gtggtgtctc agaactgtga cgggctccac
180

ctgaggagtg ggctgncgcg cacggccatc tccgagctcc acgggaacat gtacattgaa
240
ggagtacgtg cgggtgttcg atgtgacgga gcgcactgcc ctccacagac accagacagg
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349

<210> 4346
<211> 116
<212> PRT
<213> Homo sapiens

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Gln Lys Gly Arg Ser Val Ser Ala Ala Asp Xaa Glu Arg Ala Glu Pro
            20   25   30
Thr Leu Thr His Met Ser Ile Thr Arg Leu His Glu Gln Lys Leu Val
        35   40   45
Gln His Val Val Ser Gln Asn Cys Asp Gly Leu His Leu Arg Ser Gly
    50   55   60
Leu Xaa Arg Thr Ala Ile Ser Glu Leu His Gly Asn Met Tyr Ile Glu
65   70   75   80
Gly Val Arg Ala Gly Val Arg Cys Asp Gly Ala His Cys Pro Pro Gln
                85   90   95
Thr Pro Asp Arg Pro Asp Leu Pro Gln Val Trp Asp Pro Ala Ala Gly
                100   105   110
His His Cys Ala
            115

<210> 4347
<211> 353
<212> DNA
<213> Homo sapiens

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120
ccccgggggct cgcgcgcagc gggtccagct gcacaaagcc gtccgctccg tcccgccgag
180
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<210> 4348
<211> 72
<212> PRT
<213> Homo sapiens

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<400> 4348
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Ala Ala Gly Pro Ala Ala Gln Ser Arg Pro Leu Arg Pro Ala Glu Ala
                20                  25                  30
Arg Gln Cys Arg Gly Arg Ser Arg Arg Arg Val Ala Arg Ser Ser Leu
            35                  40                  45
Pro Ser Pro Ser Ala Arg Pro Gly Arg Gly Gly Arg Pro Gly Pro Gly
      50                  55                  60
Gly Ser Ala Gly Cys Pro Gly Leu
65                  70


<210> 4349
<211> 2040
<212> DNA
<213> Homo sapiens


<400> 4349
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120
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180
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240
ggagggggtc ccaggttccc tgacagaggg aggcagggca cggggggagcc tgcctcaccc
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360
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480
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1080
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1200
cctcctcaca accacccgca acgcgttcgg atgcccctca gctccaggca ccatgccccc
1260
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1320
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1440
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1680
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1920
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2040
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<210> 4350
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<212> PRT
<213> Homo sapiens
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Ile Arg Thr Gln His Gly Pro His Gly Gly Gln Val Ala Gly Gly Pro
            20              25                  30
Phe Pro Pro Leu Ala His Ala Pro Leu Thr Gly Thr Arg Pro Ser Cys
        35                  40                  45
Gly Pro Arg Leu Trp His Gly Thr Cys Pro Ser Ala Gln His Gly Pro
    50                  55                  60
Gly Ala Thr Leu Leu Ala Glu Gly Gln Gly Pro Leu Cys Arg Gln Trp
65                  70                  75                  80
Gly Gly Gly Pro Arg Phe Pro Asp Arg Gly Arg Gln Gly Thr Gly Glu
                85                  90                  95
Pro Ala Ser Pro Ser Gly Gln His Gly Pro Gly Gln Thr Glu Gln Gly
            100                 105                 110
Pro
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<210> 4351
<211> 4703
<212> DNA
<213> Homo sapiens

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120
ctggttgtca acacatattg aagaaatgta agcaaaatac agaaagtgat gattttcaaa
180
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360
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420
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aataattcat ttctgaagtt gctttccttc acttgtaaag gtctgatctc ctcccactat
540
gcatatgtac cctttactgt taaggaaagc tttgcatatg tagatataga agaataagct
600
acgtaaatac taaagatatg tcattctccc aaaggagaca caggtggttt tcaatgattc
660
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720
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780
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1260
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1380

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2880
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3000
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3360
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4380
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4440
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4560
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4620
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4703

<210> 4352
<211> 86
<212> PRT
<213> Homo sapiens

<400> 4352
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Arg Ser Phe Ala Leu Val Ala Gln Ala Gly Val Gln Xaa Leu Gly Ser
            20   25   30
Leu Gln Pro Pro Pro Pro Gly Phe Glu Leu Phe Ser Cys Leu Ser Phe
            35   40   45
Gln Ser Ser Trp Gly Tyr Arg His Ser Pro Pro Arg Leu Ala Asn Phe
        50   55   60
Ser Ile Phe Ser Arg Asp Gly Val Ser Pro Cys Trp Pro Gly Trp Ser
65   70   75   80
Gln Thr Pro Asn Leu Lys
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<210> 4353
<211> 2471
<212> DNA
<213> Homo sapiens

<400> 4353
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ccaaagaaga tgaccagaga ggactggaga aagaagaagg agctagaaga acagcgaaaa
180
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720

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2340

3546

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2471

<210> 4354
<211> 586
<212> PRT
<213> Homo sapiens

<400> 4354
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            20   25   30
Trp Arg Lys Lys Lys Glu Leu Glu Glu Gln Arg Lys Leu Gly Asn Ala
        35   40   45
Pro Ala Glu Val Asp Glu Glu Gly Lys Asp Ile Asn Pro His Ile Pro
    50   55   60
Gln Tyr Ile Ser Ser Val Pro Trp Tyr Ile Asp Pro Ser Lys Arg Pro
65   70   75   80
Thr Leu Lys His Gln Arg Pro Gln Pro Glu Lys Gln Lys Gln Phe Ser
                    85   90   95
Ser Ser Gly Glu Trp Tyr Lys Arg Gly Val Lys Glu Asn Ser Ile Ile
            100   105   110
Thr Lys Tyr Arg Lys Gly Ala Cys Glu Asn Cys Gly Ala Met Thr His
            115   120   125
Lys Lys Lys Asp Cys Phe Glu Arg Pro Arg Arg Val Gly Ala Lys Phe
        130   135   140
Thr Gly Thr Asn Ile Ala Pro Asp Glu His Val Gln Pro Gln Leu Met
145   150   155   160
Phe Asp Tyr Asp Gly Lys Arg Asp Arg Trp Asn Gly Tyr Asn Pro Glu
                165   170   175
Glu His Met Lys Ile Val Glu Glu Tyr Ala Lys Val Asp Leu Ala Lys
            180   185   190
Arg Thr Leu Lys Ala Gln Lys Leu Gln Glu Glu Leu Ala Ser Gly Lys
            195   200   205
Leu Val Glu Gln Ala Asn Ser Pro Lys His Gln Trp Gly Glu Glu Glu
    210   215   220
Pro Asn Ser Gln Thr Glu Lys Asp His Asn Ser Glu Asp Glu Asp Glu
225   230   235   240
Asp Lys Tyr Ala Asp Asp Ile Asp Met Pro Gly Gln Asn Phe Asp Ser
                245   250   255
Lys Arg Arg Ile Thr Val Arg Asn Leu Arg Ile Arg Glu Asp Ile Ala
            260   265   270
Lys Tyr Leu Arg Asn Leu Asp Pro Asn Ser Ala Tyr Tyr Asp Pro Lys
        275   280   285
Thr Arg Ala Met Arg Glu Asn Pro Tyr Ala Asn Ala Gly Lys Asn Pro
    290   295   300
Asp Glu Val Ser Tyr Ala Gly Asp Asn Phe Val Arg Tyr Thr Gly Asp
305   310   315   320
Thr Ile Ser Met Ala Gln Thr Gln Leu Phe Ala Trp Glu Ala Tyr Asp

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                    325                    330                    335
Lys Gly Ser Glu Val His Leu Gln Ala Asp Pro Thr Lys Leu Glu Leu
            340                    345                    350
Leu Tyr Lys Ser Phe Lys Val Lys Lys Glu Asp Phe Lys Glu Gln Gln
            355                    360                    365
Lys Glu Ser Ile Leu Glu Lys Tyr Gly Gly Gln Glu His Leu Asp Ala
    370                    375                    380
Pro Pro Ala Glu Leu Leu Leu Ala Gln Thr Glu Asp Tyr Val Glu Tyr
385                    390                    395                    400
Ser Arg His Gly Thr Val Ile Lys Gly Gln Glu Arg Ala Val Ala Cys
                405                    410                    415
Ser Lys Tyr Glu Glu Asp Val Lys Ile His Asn His Thr His Ile Trp
            420                    425                    430
Gly Ser Tyr Trp Lys Glu Gly Arg Trp Gly Tyr Lys Cys Cys His Ser
            435                    440                    445
Phe Phe Lys Tyr Ser Tyr Cys Thr Gly Glu Ala Gly Lys Glu Ile Val
    450                    455                    460
Asn Ser Glu Glu Cys Ile Ile Asn Glu Ile Thr Gly Glu Glu Ser Val
465                    470                    475                    480
Lys Lys Pro Gln Thr Leu Met Glu Leu His Gln Glu Lys Leu Lys Glu
                485                    490                    495
Glu Lys Lys Lys Lys Lys Lys Lys Lys Lys His Arg Lys Ser Ser
            500                    505                    510
Ser Asp Ser Asp Asp Glu Glu Lys Lys His Glu Lys Leu Lys Lys Ala
            515                    520                    525
Leu Asn Ala Glu Glu Ala Arg Leu Leu His Val Lys Glu Thr Met Gln
            530                    535                    540
Ile Asp Glu Arg Lys Arg Pro Tyr Asn Ser Met Tyr Glu Thr Arg Glu
545                    550                    555                    560
Pro Thr Glu Glu Glu Met Glu Ala Tyr Arg Met Lys Arg Gln Arg Pro
                565                    570                    575
Asp Asp Pro Met Ala Ser Phe Leu Gly Gln
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<210> 4355
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<212> DNA
<213> Homo sapiens

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180
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240
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360
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420

atatttagta aaatgaaaga aacggcacat tctgtattgg gctcagatgc aaatgatgta
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660
ggaacatcct tatctctcag cgtcatggaa gttaacagtg gaatatatcg ggttctttca
720
acaaacactg atgataacat cggtggtgca catttcacag aaaccttagc acagtatcta
780
gcttctgagt tccaaagatc cttcaaacat gatgtgagag gaaatgcgcg agccatgatg
840
aaattaacga acagtgctga agtagcgaaa cattctttgt caaccttggg aagtgccaac
900
tgttttcttg actcattata tgaaggtcaa gattttgatt gcaatgtgtc cagagcaaga
960
tttgaacttc tttgttctcc acttttttaat aagtgtatag aagcaatcag aggactctta
1020
gatcaaaatg gatttacagc agatgatatc aacaaggttg tcctttgtgg agggtcttct
1080
cgaatcccaa agctacagca actgattaaa gatctttttcc cagctgttga gcttctcaat
1140
tctatccctc ctgatgaagt gatccctatt ggtgcagcta tagaagcagg aattcttatt
1200
gggaaagaaa acctgttggt ggaagactct cttatgatag agtgttcagc cagagatatt
1260
ttagttaagg gtgtggacga atcaggagcc agtagattca cagtgctgtt tccatcaggg
1320
actcctttgc cagctcgaag acaacacaca ttgcaagccc ctggaagcat atcttcagtg
1380
tgccttgaac tctatgagtc tgatgggaag aactctgcca agaggaaac caagtttgca
1440
caggttgtac tccaggattt agataaaaaa gaaaatggat tacgtgatat attagctgtt
1500
cttactatga aaagggatgg atctttacat gtgacatgca cagatcaaga aactggaaaa
1560
tgtgaagcaa tctctattga gatagcatct tagtgtttta gagaaatcaa gaatttttaa
1620
aaacaagaat atcaacattt ggttttgtgt ataagtggtg tttgtattaa aatactttt
1680
caatgaactg tataaactat gttttattaa actacaatat atcagtaaaa aaaaaaaaaa
1740
a
1741

<210> 4356
<211> 509
<212> PRT
<213> Homo sapiens

<400> 4356
Met Ala Ala Ile Gly Val His Leu Gly Cys Thr Ser Ala Cys Val Ala

3549

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  1                   5                    10                   15
Val Tyr Lys Asp Gly Arg Ala Gly Val Val Ala Asn Asp Ala Gly Asp
              20                  25                  30
Arg Val Thr Pro Ala Val Val Ala Tyr Ser Glu Asn Glu Glu Ile Val
              35                  40                  45
Gly Leu Ala Ala Lys Gln Ser Arg Ile Arg Asn Ile Ser Asn Thr Val
              50                  55                  60
Met Lys Val Lys Gln Ile Leu Gly Arg Ser Ser Ser Asp Pro Gln Ala
65                  70                  75                  80
Gln Lys Tyr Ile Ala Glu Ser Lys Cys Leu Val Ile Glu Lys Asn Gly
              85                  90                  95
Lys Leu Arg Tyr Glu Ile Asp Thr Gly Glu Glu Thr Lys Phe Val Asn
              100                 105                 110
Pro Glu Asp Val Ala Arg Leu Ile Phe Ser Lys Met Lys Glu Thr Ala
              115                 120                 125
His Ser Val Leu Gly Ser Asp Ala Asn Asp Val Val Ile Thr Val Pro
              130                 135                 140
Phe Asp Phe Gly Glu Lys Gln Lys Asn Ala Leu Gly Glu Ala Ala Arg
145                 150                 155                 160
Ala Ala Gly Phe Asn Val Leu Arg Leu Ile His Glu Pro Ser Ala Ala
              165                 170                 175
Leu Leu Ala Tyr Gly Ile Gly Gln Asp Ser Pro Thr Gly Lys Ser Asn
              180                 185                 190
Ile Leu Val Phe Lys Leu Gly Gly Thr Ser Leu Ser Leu Ser Val Met
              195                 200                 -205
Glu Val Asn Ser Gly Ile Tyr Arg Val Leu Ser Thr Asn Thr Asp Asp
              210                 215                 220
Asn Ile Gly Gly Ala His Phe Thr Glu Thr Leu Ala Gln Tyr Leu Ala
225                 230                 235                 240
Ser Glu Phe Gln Arg Ser Phe Lys His Asp Val Arg Gly Asn Ala Arg
              245                 250                 255
Ala Met Met Lys Leu Thr Asn Ser Ala Glu Val Ala Lys His Ser Leu
              260                 265                 270
Ser Thr Leu Gly Ser Ala Asn Cys Phe Leu Asp Ser Leu Tyr Glu Gly
              275                 280                 285
Gln Asp Phe Asp Cys Asn Val Ser Arg Ala Arg Phe Glu Leu Leu Cys
              290                 295                 300
Ser Pro Leu Phe Asn Lys Cys Ile Glu Ala Ile Arg Gly Leu Leu Asp
305                 310                 315                 320
Gln Asn Gly Phe Thr Ala Asp Asp Ile Asn Lys Val Val Leu Cys Gly
              325                 330                 335
Gly Ser Ser Arg Ile Pro Lys Leu Gln Gln Leu Ile Lys Asp Leu Phe
              340                 345                 350
Pro Ala Val Glu Leu Leu Asn Ser Ile Pro Pro Asp Glu Val Ile Pro
              355                 360                 365
Ile Gly Ala Ala Ile Glu Ala Gly Ile Leu Ile Gly Lys Glu Asn Leu
              370                 375                 380
Leu Val Glu Asp Ser Leu Met Ile Glu Cys Ser Ala Arg Asp Ile Leu
385                 390                 395                 400
Val Lys Gly Val Asp Glu Ser Gly Ala Ser Arg Phe Thr Val Leu Phe
              405                 410                 415
Pro Ser Gly Thr Pro Leu Pro Ala Arg Arg Gln His Thr Leu Gln Ala
              420                 425                 430
Pro Gly Ser Ile Ser Ser Val Cys Leu Glu Leu Tyr Glu Ser Asp Gly
```

```
        435                 440                 445
Lys Asn Ser Ala Lys Glu Glu Thr Lys Phe Ala Gln Val Val Leu Gln
    450                 455                 460
Asp Leu Asp Lys Lys Glu Asn Gly Leu Arg Asp Ile Leu Ala Val Leu
465                 470                 475                 480
Thr Met Lys Arg Asp Gly Ser Leu His Val Thr Cys Thr Asp Gln Glu
                485                 490                 495
Thr Gly Lys Cys Glu Ala Ile Ser Ile Glu Ile Ala Ser
                500                 505
```

<210> 4357
<211> 421
<212> DNA
<213> Homo sapiens

<400> 4357
cggccgggcc tgtttgttgg agctgcatcc tcctcatctg caggcgctgg aaaaccagac
60
acgatcggac atgcatgtgg ttctgcggcc aaagcacgcc ctttggttgt gaacttcatg
120
atacctgtgt gcagctctgt catttccact ctgctctgct gcacagaagg cagaagccct
180
ggccgtcccc tgctgtgttc ttcaggagaa acgtcagggg ccttcctcca aggttctcca
240
gccccacacc cctgtggagg aaggtgctct ccaccgcggt agtgggggcg cccctgctcc
300
tcggagcccg ctatgtcatg gcagaggcac gggagaagag gaggatgcgg ctcgtggtgg
360
atggcatggg gcgcttttgc aggtctctaa aggtcggcct gcagatctcc ctggactact
420
g
421

<210> 4358
<211> 115
<212> PRT
<213> Homo sapiens

<400> 4358
```
Met Trp Phe Cys Gly Gln Ser Thr Pro Phe Gly Cys Glu Leu His Asp
  1               5                  10                  15
Thr Cys Val Gln Leu Cys His Phe His Ser Ala Leu Leu His Arg Arg
            20                  25                  30
Gln Lys Pro Trp Pro Ser Pro Ala Val Phe Phe Arg Arg Asn Val Arg
        35                  40                  45
Gly Leu Pro Pro Arg Phe Ser Ser Pro Thr Pro Leu Trp Arg Lys Val
    50                  55                  60
Leu Ser Thr Ala Val Val Gly Ala Pro Leu Leu Leu Gly Ala Arg Tyr
65                  70                  75                  80
Val Met Ala Glu Ala Arg Glu Lys Arg Arg Met Arg Leu Val Val Asp
                85                  90                  95
Gly Met Gly Arg Phe Cys Arg Ser Leu Lys Val Gly Leu Gln Ile Ser
            100                 105                 110
Leu Asp Tyr
```

115

<210> 4359
<211> 3661
<212> DNA
<213> Homo sapiens

<400> 4359
ncggccgagg gggcatcatg aagcgggctg gcggcgctgc gtcccgggcg gccgcgggcg
60
ggaggtgctt cccaaggacc gtagatgcct ctctagagca tgagctcagg caagagtgcc
120
cgctacaacc gcttctccgg ggggcccagc aatcttccca ccccagacgt caccacaggg
180
accagaatgg aaacgacctt cggacccgcc ttttcagccg tcaccaccat cacaaaagct
240
gacgggacca gcacctacaa gcagcactgc aggacaccct cctcctccag caccccttgcc
300
tactccccgc gggacgagga ggacagcatg ccccccatca gcactccccg ccgctccgac
360
tccgccatct ctgtccgctc cctgcactca gagtccagca tgtctctgcg ctccacattc
420
tcactgcccg aggaggagga ggagccggag ccactggtgt ttgcggagca gccctcggtg
480
aagctgtgct gtcagctctg ctgcagcgtc ttcaaagacc ccgtgatcac cacgtgtggg
540
cacacgttct gtaggagatg cgccttgaag tcagagaagt gtcccgtgga caacgtcaaa
600
ctgaccgtgg tggtgaacaa catcgcggtg gccgagcaga tcggggagct cttcatccac
660
tgccggcacg gctgccgggt agcgggcagc gggaagcccc ccatctttga ggtggacccc
720
cgagggtgcc ccttcaccat caagctcagc gcccggaagg accacgaggg cagctgtgac
780
tacaggcctg tgcggtgtcc caacaacccc agctgccccc cgctgctcag gatgaacctg
840
gaggcccacc tcaaggagtg cgagcacatc aaatgccccc actccaagta cgggtgcaca
900
tttattggga atcaggacac ctatgagaca cacttagaaa catgccgctt cgagggcctg
960
aaggagtttc tgcagcagac ggatgaccgc ttccacgaga tgcatgtggc tctggcccag
1020
aaggaccagg agatcgcctt cctgcgctcc atgctgggaa agctctcgga gaagatcgac
1080
cagctagaga agagcctgga gctcaagttt gacgtcctgg acgaaaacca gagcaagctc
1140
agcgaggacc tcatggagtt ccggcgggac gcatccatgt aaatgacga gctgtcccac
1200
atcaacgcgc ggctgaacat gggcatccta ggctcctacg accctcagca gatcttcaag
1260
tgcaaaggga cctttgtggg ccaccagggc cctgtgtggt gtctctgcgt ctactccatg
1320
ggtgacctgc tcttcagtgg ctcctctgac aagaccatca aggtgtggga cacatgtacc
1380

```
acctacaagt gtcagaagac actggagggc catgatggca tcgtgctggc tctctgcatc
1440
caggggtgca aactctacag cggctctgca gactgcacca tcattgtgtg ggacatccag
1500
aacctgcaga aggtgaacac catccgggcc catgacaacc cggtgtgcac gctggtctcc
1560
tcacacaacg tgctcttcag cggctccctg aaggccatca aggtctggga catcgtgggc
1620
actgagctga agttgaagaa ggagctcaca ggcctcaacc actgggtgcg ggccctggtg
1680
gctgcccaga gctacctgta cagcggctcc taccagacaa tcaagatctg ggacatccga
1740
acccttgact gcatccacgt cctgcagacg tctggtggca gcgtctactc cattgctgtg
1800
acaaatcacc acattgtctg tggcacctac gagaacctca tccacgtgtg ggacattgag
1860
tccaaggagc aggtgcggac cctcacgggc cacgtgggca ccgtgtatgc cctggcggtc
1920
atctcgacgc cagaccagac caaagtcttc agtgcatcct acgaccggtc cctcagggtc
1980
tggagtatgg acaacatgat ctgcacgcag accctgctgc gtcaccaggg cagtgtcacc
2040
gcgctggctg tgtcccgggg ccgactcttc tcaggggctg tggatagcac tgtgaaggtt
2100
tggacttgct aacaggatcc aggccaggct gtggtttccc ctgaaccagc cctggacctt
2160
tctgagccag gctggccaca tggggtggtc tcggggtttc tgcctgcccc gtgggcatag
2220
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2280
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2340
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2400
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2460
tgctccacag actgtggctg tgagtgggga cagctcctcg ggacaagggg gctgtgtgtg
2520
gccttgaggt tggtgtgcac aggcactggc tgctgtgagt gggggggcat ggggcagttt
2580
cctttggtgg accccaggac ttcggcccac tccggggcct ccctccctg ctaggaggca
2640
actcgtcaca cccaagctgc tggcctccag tcccatctcc cccaacacat gtgcccccaa
2700
aaagtgagcc aggcacctct gtttcctgct gtttattgac agccgacgga gcgccttgcc
2760
cagacctccc ctgcccacct gctggagccc agcctgtgcc gccctctgag gagaggcctg
2820
gggggacagc tgggcacgtc cactcgcagg gaaacacggg gtgagacagc aggaaggggc
2880
cctgcacgcc gggacgccac ctccgccagc cgcctccacc cgccccacac cacaatcgct
2940
ggttttcggc atttttaaa ttttttttt aagaaacgtc aaagttgtgc ccaacactgt
3000
```

```
ggatcagcaa acacgataga ggagaccagt cagtacttct tggaggggggc aggaggagag
3060
aggaaaaggg agggcgagaa tgaccacaca acacagcctt ggaccatgag cagaagcgtc
3120
cgtgggaact ccactggggt ggatgggctg cctgcacagc ccctggagag ggggccaggc
3180
acaccctcag aggagctgca agcccgtggc ctggcctgct acatgccctg cttccacgtg
3240
gctgccacgc tgacacaccc acattcacca aacccacccg cgccctggga cgcagccacg
3300
ccaggaggag gacacggccg ccgagagcaa ggcacaacct cgagttcttg gggcgcagag
3360
aacttaggag agaagcacgg aggagccccc ggcagagcac ccgccccccgg gccccagcct
3420
tccacctgtg ctagcagcct ggggcctcca ctctggccgg aggaaggacc gcaggcagac
3480
agcctgggcc tctaacagct tttgtccgga gctagacttc gtgtcctttc agttggtaaa
3540
tggttttcta tagaatcaat aatatttctt tctttaaata tatatttgtt aaagttatac
3600
cttttgtttt ctctggggaa atccgcctca gctcattccc aataaattaa tactcttgaa
3660
a
3661


<210> 4360
<211> 670
<212> PRT
<213> Homo sapiens

<400> 4360
Met Ser Ser Gly Lys Ser Ala Arg Tyr Asn Arg Phe Ser Gly Gly Pro
1               5                   10                  15
Ser Asn Leu Pro Thr Pro Asp Val Thr Thr Gly Thr Arg Met Glu Thr
            20                  25                  30
Thr Phe Gly Pro Ala Phe Ser Ala Val Thr Thr Ile Thr Lys Ala Asp
        35                  40                  45
Gly Thr Ser Thr Tyr Lys Gln His Cys Arg Thr Pro Ser Ser Ser Ser
    50                  55                  60
Thr Leu Ala Tyr Ser Pro Arg Asp Glu Glu Asp Ser Met Pro Pro Ile
65                  70                  75                  80
Ser Thr Pro Arg Arg Ser Asp Ser Ala Ile Ser Val Arg Ser Leu His
                85                  90                  95
Ser Glu Ser Ser Met Ser Leu Arg Ser Thr Phe Ser Leu Pro Glu Glu
            100                 105                 110
Glu Glu Glu Pro Glu Pro Leu Val Phe Ala Glu Gln Pro Ser Val Lys
        115                 120                 125
Leu Cys Cys Gln Leu Cys Cys Ser Val Phe Lys Asp Pro Val Ile Thr
    130                 135                 140
Thr Cys Gly His Thr Phe Cys Arg Arg Cys Ala Leu Lys Ser Glu Lys
145                 150                 155                 160
Cys Pro Val Asp Asn Val Lys Leu Thr Val Val Val Asn Asn Ile Ala
                165                 170                 175
Val Ala Glu Gln Ile Gly Glu Leu Phe Ile His Cys Arg His Gly Cys
```

3554

```
                    180                    185                    190
Arg Val Ala Gly Ser Gly Lys Pro Pro Ile Phe Glu Val Asp Pro Arg
        195                    200                    205
Gly Cys Pro Phe Thr Ile Lys Leu Ser Ala Arg Lys Asp His Glu Gly
    210                    215                    220
Ser Cys Asp Tyr Arg Pro Val Arg Cys Pro Asn Asn Pro Ser Cys Pro
225                    230                    235                    240
Pro Leu Leu Arg Met Asn Leu Glu Ala His Leu Lys Glu Cys Glu His
                245                    250                    255
Ile Lys Cys Pro His Ser Lys Tyr Gly Cys Thr Phe Ile Gly Asn Gln
                260                    265                    270
Asp Thr Tyr Glu Thr His Leu Glu Thr Cys Arg Phe Glu Gly Leu Lys
        275                    280                    285
Glu Phe Leu Gln Gln Thr Asp Asp Arg Phe His Glu Met His Val Ala
    290                    295                    300
Leu Ala Gln Lys Asp Gln Glu Ile Ala Phe Leu Arg Ser Met Leu Gly
305                    310                    315                    320
Lys Leu Ser Glu Lys Ile Asp Gln Leu Glu Lys Ser Leu Glu Leu Lys
                325                    330                    335
Phe Asp Val Leu Asp Glu Asn Gln Ser Lys Leu Ser Glu Asp Leu Met
            340                    345                    350
Glu Phe Arg Arg Asp Ala Ser Met Leu Asn Asp Glu Leu Ser His Ile
        355                    360                    365
Asn Ala Arg Leu Asn Met Gly Ile Leu Gly Ser Tyr Asp Pro Gln Gln
    370                    375                    380
Ile Phe Lys Cys Lys Gly Thr Phe Val Gly His Gln Gly Pro Val Trp
385                    390                    395                    400
Cys Leu Cys Val Tyr Ser Met Gly Asp Leu Leu Phe Ser Gly Ser Ser
            405                    410                    415
Asp Lys Thr Ile Lys Val Trp Asp Thr Cys Thr Thr Tyr Lys Cys Gln
            420                    425                    430
Lys Thr Leu Glu Gly His Asp Gly Ile Val Leu Ala Leu Cys Ile Gln
        435                    440                    445
Gly Cys Lys Leu Tyr Ser Gly Ser Ala Asp Cys Thr Ile Ile Val Trp
    450                    455                    460
Asp Ile Gln Asn Leu Gln Lys Val Asn Thr Ile Arg Ala His Asp Asn
465                    470                    475                    480
Pro Val Cys Thr Leu Val Ser Ser His Asn Val Leu Phe Ser Gly Ser
            485                    490                    495
Leu Lys Ala Ile Lys Val Trp Asp Ile Val Gly Thr Glu Leu Lys Leu
        500                    505                    510
Lys Lys Glu Leu Thr Gly Leu Asn His Trp Val Arg Ala Leu Val Ala
    515                    520                    525
Ala Gln Ser Tyr Leu Tyr Ser Gly Ser Tyr Gln Thr Ile Lys Ile Trp
    530                    535                    540
Asp Ile Arg Thr Leu Asp Cys Ile His Val Leu Gln Thr Ser Gly Gly
545                    550                    555                    560
Ser Val Tyr Ser Ile Ala Val Thr Asn His His Ile Val Cys Gly Thr
            565                    570                    575
Tyr Glu Asn Leu Ile His Val Trp Asp Ile Glu Ser Lys Glu Gln Val
        580                    585                    590
Arg Thr Leu Thr Gly His Val Gly Thr Val Tyr Ala Leu Ala Val Ile
    595                    600                    605
Ser Thr Pro Asp Gln Thr Lys Val Phe Ser Ala Ser Tyr Asp Arg Ser
```

```
           610                    615                    620
Leu Arg Val Trp Ser Met Asp Asn Met Ile Cys Thr Gln Thr Leu Leu
625                    630                    635                    640
Arg His Gln Gly Ser Val Thr Ala Leu Ala Val Ser Arg Gly Arg Leu
               645                    650  .               655
Phe Ser Gly Ala Val Asp Ser Thr Val Lys Val Trp Thr Cys
               660                    665                    670
```

```
<210> 4361
<211> 574
<212> DNA
<213> Homo sapiens
```

```
<400> 4361
nggatccaga acccattgct atcaggctgt acagccttca atcacaacgg gaacctgctg
60
gtcacagggg cagctgatgg cgtcatccgg ctgtttgaca tgcagcagca tgagtgcgcg
120
atgagctgga gggcccacta cggggaggtc tactctgtgg agttcagcta tgatgagaac
180
accgtgtaca gcatcggcga ggacgggaag gtaggcggct ccaggattca gataagagag
240
caccgggatg acatgtgggc cggctgcagg ttgtggccat acctgttact agctctgcaa
300
cctggggcct cttttttgcag ctttgttatc tgtagaatag ggataaacta gtaattcgtc
360
ttacaatcct tgcgaggttt tagtgaattc agtgggagtt ggctatcctt atgaaaggaa
420
gtaccaaaaa ttactcatct taccatagat gtatctgtgg ggtctggatt tagggctgag
480
tttgctttgc tgggcttggt agtgagtggt cccaggacca ctcatggatg tgtagtttgc
540
tgagtggctg gggacagctt cttacatgtg taca
574
```

```
<210> 4362
<211> 116
<212> PRT
<213> Homo sapiens
```

```
<400> 4362
Xaa Ile Gln Asn Pro Leu Leu Ser Gly Cys Thr Ala Phe Asn His Asn
1                5                    10                    15
Gly Asn Leu Leu Val Thr Gly Ala Ala Asp Gly Val Ile Arg Leu Phe
               20                    25                    30
Asp Met Gln Gln His Glu Cys Ala Met Ser Trp Arg Ala His Tyr Gly
               35                    40                    45
Glu Val Tyr Ser Val Glu Phe Ser Tyr Asp Glu Asn Thr Val Tyr Ser
               50                    55                    60
Ile Gly Glu Asp Gly Lys Val Gly Gly Ser Arg Ile Gln Ile Arg Glu
65                    70                    75                    80
His Arg Asp Asp Met Trp Ala Gly Cys Arg Leu Trp Pro Tyr Leu Leu
               85                    90                    95
Leu Ala Leu Gln Pro Gly Ala Ser Phe Cys Ser Phe Val Ile Cys Arg
```

```
                  100                 105                 110
Ile Gly Ile Asn
         115


<210> 4363
<211> 1222
<212> DNA
<213> Homo sapiens

<400> 4363
ttttttttt tttttttttt tttttttttt tttttttttt tttttgagat ttcccaggac
60
tggctttaat ttgaaaaatc tgattggggt ctcttcccgt atcagagaag gaacagccca
120
agctatgacc ccagggccag ggaattcagt ccccaccaga ccctgtcatt ccatcactag
180
ggggtaattc caggctcccc ctgccagccc tgagacagga ggacggatgt gaagttgccc
240
aggactagat tctgtctctc caaagtggcc caagccctgt tctctgtact agggaagcca
300
gctgtgtctt ttcgaggaca gttggtccag ccagcaggct cagttcagat accagacaac
360
cattccagca cgagggctca gcgccctggc cccggcggtc gctccagtgc ctgtgtgccc
420
accagcacat ccatgaggta gtccaattcg gcctcgtcca gctccggagc ttcctccttg
480
cccggcccat cctcagggcc tggtttgagg ccctcagagg ctggtgccca aagttcattg
540
tcatacatag aggtgtcaat atcctcaaac aggccctcga gcccatcgtc cagtagacag
600
ccagtggctg ggcccagcag gtccaaggca cccaggctgg gcgctgctcc cccgatgcta
660
cggcctggtg gcccctcgtc tgccaagggt tggggagcct gactcaggcc ctcaatgtgg
720
ctgaggtcct ccaggaggct ggccatggag gctgaaaggg cagcgtccga gcttgccagt
780
aagttgtcag ccacactggg ggctgcaggt gggctaggca caggtggcag ggcagccgcg
840
ggtgccatgg acgccnntgg atgcgccgca gagtgttcac gaccagcacc aggtgccgca
900
ggtccggctc actctgctgc aggctgtggt nggagcttga gcactgagag gtcaaagagg
960
gagctagagg ccacggccgg gggtgcctgt gccaccgctg cgtggccagg atctagccac
1020
caggagtcga ctgccagagg ttccttctcc tcctcctcct cccgtttccg cttcagaccc
1080
ttgctcagca tcttgctcac tagcggccaa tcagaacgaa gaggtagcca cccacaacca
1140
atcaggaaac ggcggcggca gcatcgcttg ttggctgtcc tccggaaacc cgcgcctggg
1200
tcgcgagacg cagttctagc ga
1222


<210> 4364
```

```
<211> 75
<212> PRT
<213> Homo sapiens

<400> 4364
Asp Arg Arg Thr Asp Val Lys Leu Pro Arg Thr Arg Phe Cys Leu Ser
1               5                   10                  15
Lys Val Ala Gln Ala Leu Phe Ser Val Leu Gly Lys Pro Ala Val Ser
            20                  25                  30
Phe Arg Gly Gln Leu Val Gln Pro Ala Gly Ser Val Gln Ile Pro Asp
        35                  40                  45
Asn His Ser Ser Thr Arg Ala Gln Arg Pro Gly Pro Gly Gly Arg Ser
    50                  55                  60
Ser Ala Cys Val Pro Thr Ser Thr Ser Met Arg
65                  70                  75


<210> 4365
<211> 469
<212> DNA
<213> Homo sapiens

<400> 4365
gacgtgctcg atggcaaggt cgcaccgggc aagaacgtgc cggtctacga caccatctgc
60
gagttcaccg gcatgtcggt cgccgacttc ctcgctgaca agggcagcca ggttgagatc
120
gtcaccgacg acatcaagcc gggtgtggcg attggcggta cgtcgttccc gacctactac
180
cgcagcatgt acccgaaaga agtgatcatg accggcgaca tgatgctgga aaaggtctat
240
cgcgagggcg acaagctggt ggcggtgctg gagaacgaat acaccggcgc caaggaagag
300
cgggtggtcg accaggtggt ggtggagaac ggtgtgcgtc cggatgagga aatctactac
360
gggctcaagg aaggttcgcg caacaagggc cagatcgatg tcgaagccct gttcgcgatc
420
aagccgcagc cttcgctgaa tactcttaat gaagaggcag cgggtgacg
469


<210> 4366
<211> 156
<212> PRT
<213> Homo sapiens

<400> 4366
Asp Val Leu Asp Gly Lys Val Ala Pro Gly Lys Asn Val Pro Val Tyr
1               5                   10                  15
Asp Thr Ile Cys Glu Phe Thr Gly Met Ser Val Ala Asp Phe Leu Ala
            20                  25                  30
Asp Lys Gly Ser Gln Val Glu Ile Val Thr Asp Asp Ile Lys Pro Gly
        35                  40                  45
Val Ala Ile Gly Gly Thr Ser Phe Pro Thr Tyr Tyr Arg Ser Met Tyr
    50                  55                  60
Pro Lys Glu Val Ile Met Thr Gly Asp Met Met Leu Glu Lys Val Tyr
```

```
65                    70                    75                    80
Arg Glu Gly Asp Lys Leu Val Ala Val Leu Glu Asn Glu Tyr Thr Gly
                85                    90                    95
Ala Lys Glu Glu Arg Val Val Asp Gln Val Val Val Glu Asn Gly Val
            100                   105                   110
Arg Pro Asp Glu Glu Ile Tyr Tyr Gly Leu Lys Glu Gly Ser Arg Asn
        115                   120                   125
Lys Gly Gln Ile Asp Val Glu Ala Leu Phe Ala Ile Lys Pro Gln Pro
    130                   135                   140
Ser Leu Asn Thr Leu Asn Glu Glu Ala Ala Gly Asp
145                   150                   155
```

<210> 4367
<211> 852
<212> DNA
<213> Homo sapiens

<400> 4367
```
nncctaggca gggggatggc cctgcgtgac tgcaccagaa ggaaggagct ggggccggct
60
ggccttttgc aggtggaatt tccagaggcc cggatcttcg aggagaccct gaacatcctc
120
atctacgaga ctccccgggg cccagaccca gccctcctgg aggccacagg gggagcagct
180
ggagctggtg gggctggccg cggggaggat gaagagaacc gagagcaccg tgtccgcagg
240
atccatgtcc ggcgccatat cacccacgac gagcgtcctc atggccaaca aattgtcttc
300
aaggactgac ctctgaccct ccccctgcct tcctcttgcc ttgggaccca gtccctctct
360
ctttcctcc ccttcccaga cttttgcccc ggctctgctg gccaagtcgt gggtcctcct
420
ctgtcccttc attgcatggc acagctcact ttggcccttc tccacccgtc ccaaccccat
480
tgctaacaac atggtacatt ccggccccac cactcagagc cttccgaagc caacacttgt
540
ccccaccctg gccctgcgtc cttccctctc cagctggtta agagggattt agaattccct
600
ttctcttttt ttagtgcatc gtccatgcca aagtgtgcgg cccttcctga catcaccaca
660
gtctgagcag cctcccgcgt cctgcagggt agtccgcccc ctcctcccca ccatcctccc
720
tacctcctta actttgtact agactggcct gggcctgccc agctcagcgt tatcagtctg
780
tttcatatta tttattattt taattttcta ttaaattatt gaaataaagt taagttgaga
840
aactaaaaaa aa
852
```

<210> 4368
<211> 102
<212> PRT
<213> Homo sapiens

```
<400> 4368
Xaa Leu Gly Arg Gly Met Ala Leu Arg Asp Cys Thr Arg Arg Lys Glu
1               5                   10                  15
Leu Gly Pro Ala Gly Leu Leu Gln Val Glu Phe Pro Glu Ala Arg Ile
            20                  25                  30
Phe Glu Glu Thr Leu Asn Ile Leu Ile Tyr Glu Thr Pro Arg Gly Pro
        35                  40                  45
Asp Pro Ala Leu Leu Glu Ala Thr Gly Gly Ala Ala Gly Ala Gly Gly
    50                  55                  60
Ala Gly Arg Gly Glu Asp Glu Glu Asn Arg Glu His Arg Val Arg Arg
65                  70                  75                  80
Ile His Val Arg Arg His Ile Thr His Asp Glu Arg Pro His Gly Gln
                85                  90                  95
Gln Ile Val Phe Lys Asp
                100
```

```
<210> 4369
<211> 1264
<212> DNA
<213> Homo sapiens
```

```
<400> 4369
gctcagctgg ccaaccctga atcccccctg ggcagtgcag agcagttcct cctcaccctg
60
tcctccatca gcgagctctc tgcacgactt cacctctggg-cattcaaaat ggattatgaa
120
actacagaaa aggaagtagc agaaccactc ctggacctga aggaaggaat agaccagttg
180
gagaacaata aaaccttggg ctttatcctg tctactctct tagccattgg gaactttcta
240
aatggaacta atgccaaagc gtttgagtta agctacctcg agaaggttcc agaagtcaaa
300
gacacagtgc acaagcagtc gcttctccac catgtgtgca ccatggtggt agaaaacttc
360
ccagacagct ccgatctgta ctcggagatc ggggccatca ccaggtcagc caaggttgac
420
tttgatcaac ttcaggataa tttatgtcag atggagagaa gatgcaaagc ttcatgggat
480
cacctcaagg caattgcaaa acatgaaatg aaaccagttt taaaacaacg gatgtcagag
540
ttcctgaaag actgtgcaga gcgaattata attttaaaga ttgtccatag aaggataatc
600
aacagattcc actccttttt actctttatg gccatccac cttatgcaat tcgggaagtg
660
aacataaaca aattctgcag gattattagt gaatttgcac tagagtatcg cacaaccagg
720
gaaagggttt tgcagcagaa acagaaacgg gccaaccaca gagagagaaa taagaccaga
780
gggaagatga tcaccgattc tggcaagttc tccggcagtt ctccggcgcc cccaagccag
840
ccgcagggtc tgagctatgc ggaggacgcg gctgagcacg agaacatgaa ggctgtgctg
900
aaaacctcgt ccccctccag gagtcccctg cacatacctt ctccatcgtg tcagctgtgt
960
```

3560

```
ttctcttgat tccgtgacac ccggtttatt agttcaaaag tgtgacacct tttctgggca
1020
aggaacagcc cctttaagga gcaaatcact tctgtcacag ttattatggt aatatgaggc
1080
aatctgatta gcttcacaga ctgagtctcc acaacaccaa aatatccaga tgtaaacccc
1140
aaacttgtac acaaaagaaa gcacagattg tttacctgtt gtggatttta gatgtaacaa
1200
atgtttatac aaatacatac atgtacacca tgtttcaaat actaaataaa tagagtttaa
1260
tgcc
1264


<210> 4370
<211> 322
<212> PRT
<213> Homo sapiens

<400> 4370
Ala Gln Leu Ala Asn Pro Glu Ile Pro Leu Gly Ser Ala Glu Gln Phe
 1               5                  10                  15
Leu Leu Thr Leu Ser Ser Ile Ser Glu Leu Ser Ala Arg Leu His Leu
            20                  25                  30
Trp Ala Phe Lys Met Asp Tyr Glu Thr Thr Glu Lys Glu Val Ala Glu
        35                  40                  45
Pro Leu Leu Asp Leu Lys Glu Gly Ile Asp Gln Leu Glu Asn Asn Lys
    50                  55                  60
Thr Leu Gly Phe Ile Leu Ser Thr Leu Leu Ala Ile Gly Asn Phe Leu
65                  70                  75                  80
Asn Gly Thr Asn Ala Lys Ala Phe Glu Leu Ser Tyr Leu Glu Lys Val
                85                  90                  95
Pro Glu Val Lys Asp Thr Val His Lys Gln Ser Leu Leu His His Val
            100                 105                 110
Cys Thr Met Val Val Glu Asn Phe Pro Asp Ser Ser Asp Leu Tyr Ser
        115                 120                 125
Glu Ile Gly Ala Ile Thr Arg Ser Ala Lys Val Asp Phe Asp Gln Leu
    130                 135                 140
Gln Asp Asn Leu Cys Gln Met Glu Arg Arg Cys Lys Ala Ser Trp Asp
145                 150                 155                 160
His Leu Lys Ala Ile Ala Lys His Glu Met Lys Pro Val Leu Lys Gln
                165                 170                 175
Arg Met Ser Glu Phe Leu Lys Asp Cys Ala Glu Arg Ile Ile Ile Leu
            180                 185                 190
Lys Ile Val His Arg Arg Ile Ile Asn Arg Phe His Ser Phe Leu Leu
        195                 200                 205
Phe Met Gly His Pro Pro Tyr Ala Ile Arg Glu Val Asn Ile Asn Lys
    210                 215                 220
Phe Cys Arg Ile Ile Ser Glu Phe Ala Leu Glu Tyr Arg Thr Thr Arg
225                 230                 235                 240
Glu Arg Val Leu Gln Gln Lys Gln Lys Arg Ala Asn His Arg Glu Arg
                245                 250                 255
Asn Lys Thr Arg Gly Lys Met Ile Thr Asp Ser Gly Lys Phe Ser Gly
            260                 265                 270
Ser Ser Pro Ala Pro Pro Ser Gln Pro Gln Gly Leu Ser Tyr Ala Glu
```

```
             275                    280                    285
Asp Ala Ala Glu His Glu Asn Met Lys Ala Val Leu Lys Thr Ser Ser
         290                    295                    300
Pro Ser Arg Ser Pro Leu His Ile Pro Ser Pro Ser Cys Gln Leu Cys
305                    310                    315                    320
Phe Ser
```

<210> 4371
<211> 907
<212> DNA
<213> Homo sapiens

<400> 4371
```
actttcaaaa tggcggagtg tggagcgagc ggcagcggga gcagcgggga cagtctggac
60
aagagcatca cgctgccccc cgacgagatc ttccgcaacc tggagaacgc caagcgcttc
120
gccatcgaca taggcgggtc gttaaccaag ctggcctact attcaacggt acagcacaaa
180
gtcgccaagg tgcggtcttt cgaccactcc ggaaaggaca cagaacgtga acatgagccg
240
ccctatgaga tttcagttca agaagagatc actgctcgac tgcacttcat taagtttgag
300
aatacctaca tcgaagcctg cctggacttc atcaaagacc atctcgtcaa cacagagacc
360
aaggtcatcc aggcgaccgg gggcggggcc tacaagttca aggacctcat cgaagagaag
420
ctgcggctga aagtcgacaa ggaggacgtg atgacgtgcc tgattaaggg gtgcaacttc
480
gtgctcaaga acatccccca tgaggccttc gtgtaccaga aggattccga ccctgagttc
540
cggttccaga ccaaccaccc ccacattttc ccctatcttc ttgtcaatat cggctctgga
600
gtctccatcg tgaaggtgga gacggaggac aggttcgagt gggtcggcgg cagctccatt
660
ggaggcggca ccttctgggg gcttggcgct ctgctcacca aaacgaagaa gtttgacgag
720
ctcctgcacc tggcctcgag gggccagcac agcaatgtgg acatgctggt gcgggacgtc
780
tacggcggcg cccaccagac tctcgggctg agcgggaacc tcatcgccag cagcttcggg
840
aagtcggcca ccgccgacca agagttctcc aaagaagaca tggcgaagag cctgctgcac
900
atgatca
907
```

<210> 4372
<211> 302
<212> PRT
<213> Homo sapiens

<400> 4372
Thr Phe Lys Met Ala Glu Cys Gly Ala Ser Gly Ser Gly Ser Ser Gly

```
    1                5                    10                  15
  Asp Ser Leu Asp Lys Ser Ile Thr Leu Pro Pro Asp Glu Ile Phe Arg
                 20                  25                  30
  Asn Leu Glu Asn Ala Lys Arg Phe Ala Ile Asp Ile Gly Gly Ser Leu
                 35                  40                  45
  Thr Lys Leu Ala Tyr Tyr Ser Thr Val Gln His Lys Val Ala Lys Val
       50                  55                  60
  Arg Ser Phe Asp His Ser Gly Lys Asp Thr Glu Arg Glu His Glu Pro
  65                  70                  75                  80
  Pro Tyr Glu Ile Ser Val Gln Glu Glu Ile Thr Ala Arg Leu His Phe
                 85                  90                  95
  Ile Lys Phe Glu Asn Thr Tyr Ile Glu Ala Cys Leu Asp Phe Ile Lys
                 100                 105                 110
  Asp His Leu Val Asn Thr Glu Thr Lys Val Ile Gln Ala Thr Gly Gly
                 115                 120                 125
  Gly Ala Tyr Lys Phe Lys Asp Leu Ile Glu Glu Lys Leu Arg Leu Lys
       130                 135                 140
  Val Asp Lys Glu Asp Val Met Thr Cys Leu Ile Lys Gly Cys Asn Phe
  145                 150                 155                 160
  Val Leu Lys Asn Ile Pro His Glu Ala Phe Val Tyr Gln Lys Asp Ser
                 165                 170                 175
  Asp Pro Glu Phe Arg Phe Gln Thr Asn His Pro His Ile Phe Pro Tyr
                 180                 185                 190
  Leu Leu Val Asn Ile Gly Ser Gly Val Ser Ile Val Lys Val Glu Thr
                 195                 200                 205
  Glu Asp Arg Phe Glu Trp Val Gly Gly Ser Ser Ile Gly Gly Gly Thr
       210                 215                 220
  Phe Trp Gly Leu Gly Ala Leu Leu Thr Lys Thr Lys Lys Phe Asp Glu
  225                 230                 235                 240
  Leu Leu His Leu Ala Ser Arg Gly Gln His Ser Asn Val Asp Met Leu
                 245                 250                 255
  Val Arg Asp Val Tyr Gly Gly Ala His Gln Thr Leu Gly Leu Ser Gly
                 260                 265                 270
  Asn Leu Ile Ala Ser Ser Phe Gly Lys Ser Ala Thr Ala Asp Gln Glu
       275                 280                 285
  Phe Ser Lys Glu Asp Met Ala Lys Ser Leu Leu His Met Ile
  290                 295                 300
```

<210> 4373
<211> 1017
<212> DNA
<213> Homo sapiens

<400> 4373
acgcgtcatc acggctgcgc cggggggaatc cgtgcgggcg ccttccgtcc cggtcccatc
60
ctcgccgcgc tccagcacct ctgaagtttt gcagcgccca gaaaggaggc gaggaaggag
120
ggagtgtgtg agaggaggga gcaaaaagct caccctaaaa catttatttc aaggagaaaa
180
gaaaaagggg gggcgcaaaa atggctgggg caattataga aaacatgagc accaagaagc
240
tgtgcattgt tggtgggatt ctgctcgtgt tccaaatcat cgcctttctg gtgggaggct
300

```
tgattgctcc agggcccaca acggcagtgt cctacatgtc ggtgaaatgt gtggatgccc
360
gtaagaacca tcacaagaca aaatggttcg tgccttgggg acccaatcat tgtgacaaga
420
tccgagacat tgaagaggca attccaaggg aaattgaagc caatgacatc gtgttttctg
480
ttcacattcc cctcccccac atggagatga gtccttggtt ccaattcatg ctgtttatcc
540
tgcagctgga cattgccttc aagctaaaca accaaatcag agaaaatgca gaagtctcca
600
tggacgtttc cctggcttac cgtgatgacg cgtttgctga gtggactgaa atggcccatg
660
aaagagtacc acggaaactc aaatgcacct tcacatctcc caagactcca gagcatgagg
720
gccgttacta tgaatgtgat gtccttcctt tcatggaaat tgggtctgtg gcccataagt
780
tttacctttt aaacatccgg ctgcctgtga atgagaagaa gaaaatcaat gtgggaattg
840
gggagataaa ggatatccgg ttggtgggga tccaccaaaa tggaggcttc accaaggtgt
900
ggtttgccat gaagaccttc cttacgccca gcatcttcat cattatggtg tggtattgga
960
ggaggatcac catgatgtcc cgacccccag tgcttctgga aaaagtcatc tttgccc
1017
```

```
<210> 4374
<211> 272
<212> PRT
<213> Homo sapiens
```

```
<400> 4374
Met Ala Gly Ala Ile Ile Glu Asn Met Ser Thr Lys Lys Leu Cys Ile
1               5                   10                  15
Val Gly Gly Ile Leu Leu Val Phe Gln Ile Ile Ala Phe Leu Val Gly
                20                  25                  30
Gly Leu Ile Ala Pro Gly Pro Thr Thr Ala Val Ser Tyr Met Ser Val
        35                  40                  45
Lys Cys Val Asp Ala Arg Lys Asn His His Lys Thr Lys Trp Phe Val
    50                  55                  60
Pro Trp Gly Pro Asn His Cys Asp Lys Ile Arg Asp Ile Glu Glu Ala
65                  70                  75                  80
Ile Pro Arg Glu Ile Glu Ala Asn Asp Ile Val Phe Ser Val His Ile
                85                  90                  95
Pro Leu Pro His Met Glu Met Ser Pro Trp Phe Gln Phe Met Leu Phe
            100                 105                 110
Ile Leu Gln Leu Asp Ile Ala Phe Lys Leu Asn Asn Gln Ile Arg Glu
        115                 120                 125
Asn Ala Glu Val Ser Met Asp Val Ser Leu Ala Tyr Arg Asp Asp Ala
    130                 135                 140
Phe Ala Glu Trp Thr Glu Met Ala His Glu Arg Val Pro Arg Lys Leu
145                 150                 155                 160
Lys Cys Thr Phe Thr Ser Pro Lys Thr Pro Glu His Glu Gly Arg Tyr
                165                 170                 175
Tyr Glu Cys Asp Val Leu Pro Phe Met Glu Ile Gly Ser Val Ala His
```

3564

```
                    180                        185                        190
     Lys Phe Tyr Leu Leu Asn Ile Arg Leu Pro Val Asn Glu Lys Lys Lys
               195                        200                        205
     Ile Asn Val Gly Ile Gly Glu Ile Lys Asp Ile Arg Leu Val Gly Ile
           210                        215                        220
     His Gln Asn Gly Gly Phe Thr Lys Val Trp Phe Ala Met Lys Thr Phe
     225                        230                        235                        240
     Leu Thr Pro Ser Ile Phe Ile Ile Met Val Trp Tyr Trp Arg Arg Ile
                    245                        250                        255
     Thr Met Met Ser Arg Pro Pro Val Leu Leu Glu Lys Val Ile Phe Ala
                    260                        265                        270
```

<210> 4375
<211> 1966
<212> DNA
<213> Homo sapiens

<400> 4375
aaggtgcctg cattgtatac caccacgtcg ggcaggtgct cctggaggga tttcttgatg
60
ttcctctcca ccttatccag gtactcatca tcctctgtgc cccactccag ctccaccttc
120
cgcctgacgg ccagctttgg gagggccggc cccgggatgc tacacacaac ccagctgtac
180
cagcatgtgc cagagacacg ctggccaatc gtgtactcgc cgcgctacaa catcaccttc
240
atgggcctgg agaagctgca tccctttgat gccggaaaat ggggcaaagt gatcaatttc
300
ctaaaagaag agaagcttct gtctgacagc atgctggtgg aggcgcggga ggcctcggag
360
gaggacctgc tggtggtgca cacgaggcgc tatcttaatg agctcaagtg gtcctttgct
420
gttgctacca tcacagaaat ccccccccgtt atcttcctcc ccaacttcct tgtgcagagg
480
aaggtgctga ggcccccttcg gacccagaca ggaggaacca taatggcggg gaagctggct
540
gtggagcgag gctgggccat caacgtgggg ggtggcttcc accactgctc cagcgaccgt
600
ggcggggggct tctgtgccta tgcggacatc acgctcgcca tcaagtttct gtttgagcgt
660
gtggagggca tctccagggc taccatcatt gatcttgatg cccatcaggg caatgggcat
720
gagcgagact tcatggacga caagtgtgtg acatgcatgg atgtctacaa ccgccacatc
780
tacccagggg accgctttgc caagcaggcc atcaggcgga aggtggagct ggagtggggc
840
acagaggatg atgagtacct ggataaggtg gagaggaaca tcaagaaatc cctccaggag
900
cacctgcccg acgtggtggt atacaatgca ggcaccgaca tcctcgaggg ggaccgcctt
960
gggggggctgt ccatcagccc agcgggcatc gtgaagcggg atgagctggt gttccggatg
1020
gtccgtggcc gccgggtgcc catccttatg gtgacctcag gcgggtacca gaagcgcaca
1080
```

gcccgcatca ttgctgactc catacttaat ctgtttggcc tggggctcat tgggcctgag
1140
tcacccagcg tctccgcaca gaactcagac acaccgctgc ttccccctgc agtgccctga
1200
cccttgctgc cctgcctgtc acgtggccct gcctatccgc cccttagtgc tttttgtttt
1260
ctaacctcat ggggtggtgg aggcagcctt cagtgagcat ggaggggcag ggccatccct
1320
ggctggggcc tggagctggc ccttcctcta cttttccctg ctggaagcca gaagggcttg
1380
aggcctctat gggtgggggc agaaagcaga gcctgtgtcc caggggaccc acacgaagtc
1440
accagcccat aggtccaggg aggcaggcag ttaactgaga attggagagg acaggctagg
1500
tcccaggcac agcgagggcc ctgggcttgg ggtgttctgg ttttgagaac ggcagaccca
1560
ggtcggagtg aggaagcttc cacctccatc ctgactaggc ctgcatccta actgggcctc
1620
cctccctccc cttggtcatg ggatttgctg ccctctttgc cccagagctg aagagctata
1680
ggcactggtg tggatggccc aggaggtgct ggagctaggt ctccaggtgg gcctggttcc
1740
caggcagcag gtgggaaccc tgggcctgga tgtgaggggc ggtcaggaag gggtacaggt
1800
gggttccctc atctggagtt cccccctcaat aaagcaaggt ctggacctgc cttcccaggc
1860
ccttctgtgg gggtgaaggt ggggaaggcc tgcggcgccc agatcactgc cttagcagta
1920
gtcttgcctg ttcagtgcaa ggggcaggtt ttgggggggag gaattc
1966

<210> 4376
<211> 399
<212> PRT
<213> Homo sapiens

<400> 4376
Lys Val Pro Ala Leu Tyr Thr Thr Thr Ser Gly Arg Cys Ser Trp Arg
1   5   10   15
Asp Phe Leu Met Phe Leu Ser Thr Leu Ser Arg Tyr Ser Ser Ser Ser
            20   25   30
Val Pro His Ser Ser Ser Thr Phe Arg Leu Thr Ala Ser Phe Gly Arg
        35   40   45
Ala Gly Pro Gly Met Leu His Thr Thr Gln Leu Tyr Gln His Val Pro
    50   55   60
Glu Thr Arg Trp Pro Ile Val Tyr Ser Pro Arg Tyr Asn Ile Thr Phe
65   70   75   80
Met Gly Leu Glu Lys Leu His Pro Phe Asp Ala Gly Lys Trp Gly Lys
                85   90   95
Val Ile Asn Phe Leu Lys Glu Glu Lys Leu Leu Ser Asp Ser Met Leu
                100   105   110
Val Glu Ala Arg Glu Ala Ser Glu Glu Asp Leu Leu Val Val His Thr
            115   120   125
Arg Arg Tyr Leu Asn Glu Leu Lys Trp Ser Phe Ala Val Ala Thr Ile

```
           130               135               140
Thr Glu Ile Pro Pro Val Ile Phe Leu Pro Asn Phe Leu Val Gln Arg
145               150               155               160
Lys Val Leu Arg Pro Leu Arg Thr Gln Thr Gly Gly Thr Ile Met Ala
                165               170               175
Gly Lys Leu Ala Val Glu Arg Gly Trp Ala Ile Asn Val Gly Gly Gly
            180               185               190
Phe His His Cys Ser Ser Asp Arg Gly Gly Gly Phe Cys Ala Tyr Ala
        195               200               205
Asp Ile Thr Leu Ala Ile Lys Phe Leu Phe Glu Arg Val Glu Gly Ile
    210               215               220
Ser Arg Ala Thr Ile Ile Asp Leu Asp Ala His Gln Gly Asn Gly His
225               230               235               240
Glu Arg Asp Phe Met Asp Asp Lys Cys Val Thr Cys Met Asp Val Tyr
                245               250               255
Asn Arg His Ile Tyr Pro Gly Asp Arg Phe Ala Lys Gln Ala Ile Arg
                260               265               270
Arg Lys Val Glu Leu Glu Trp Gly Thr Glu Asp Asp Glu Tyr Leu Asp
            275               280               285
Lys Val Glu Arg Asn Ile Lys Lys Ser Leu Gln Glu His Leu Pro Asp
        290               295               300
Val Val Val Tyr Asn Ala Gly Thr Asp Ile Leu Glu Gly Asp Arg Leu
305               310               315               320
Gly Gly Leu Ser Ile Ser Pro Ala Gly Ile Val Lys Arg Asp Glu Leu
                325               330               335
Val Phe Arg Met Val Arg Gly Arg Arg Val Pro Ile Leu Met Val Thr
            340               345               350
Ser Gly Gly Tyr Gln Lys Arg Thr Ala Arg Ile Ile Ala Asp Ser Ile
        355               360               365
Leu Asn Leu Phe Gly Leu Gly Leu Ile Gly Pro Glu Ser Pro Ser Val
    370               375               380
Ser Ala Gln Asn Ser Asp Thr Pro Leu Leu Pro Pro Ala Val Pro
385               390               395
```

<210> 4377
<211> 812
<212> DNA
<213> Homo sapiens

<400> 4377
ntcctgggga ggcggtgccc cccatggcga ggccggcgag agcagggcct gcttccccc
60
gaggacagcc gcctgtggca gtatcttctg agccgctcca tgcgggagca cccggcgctg
120
cgaagcctga ggctgctgac cctggagcag ccgcaggggg attctatgat gacctgcgag
180
caggcccagc tcttggccaa cctggcgcgg ctcatccagg ccaagaaggc gctggacctg
240
ggcaccttca cgggctactc cgccctggcc ctggccctgg cgctgcccgc ggacgggcgc
300
gtggtgacct gcgaggtgga cgcgcagccc ccggagctgg acggcccct gtggaggcag
360
gccgaggcgg agcacaagat tcgactccgg ctgaagcccg ccttggagac cctggacgag
420
```

ctgctggcgg cgggcgaggc cggcaccttc gacgtggccg tggtggatgc ggacaaggag
480
aactgctccg cctactacga gcgctgcctg cagctgctgc gacccggagg catcctcgcc
540
gtcctcagag tcctgtggcg cgggaaggtg ctgcaacctc cgaaagggga cgtggcggcc
600
gagtgtgtgc gaaacctaaa cgaacgcatc cggcgggacg tcagggtcta catcagcctc
660
ctgcccctgg gcgatggact caccttggcc ttcaagatct agggctggcc cctagtgagt
720
gggctcgagg gagggttgcc tgggaacccc aggaattgac cctgagtttt aaattcgaaa
780
ataaagtggg gctgggacac acgaaaaaaa aa
812

<210> 4378
<211> 233
<212> PRT
<213> Homo sapiens

<400> 4378
Xaa Leu Gly Arg Arg Cys Pro Pro Trp Arg Gly Arg Arg Glu Gln Gly
1               5                   10                  15
Leu Leu Pro Pro Glu Asp Ser Arg Leu Trp Gln Tyr Leu Leu Ser Arg
            20                  25                  30
Ser Met Arg Glu His Pro Ala Leu Arg Ser Leu Arg Leu Leu Thr Leu
        35                  40                  45
Glu Gln Pro Gln Gly Asp Ser Met Met Thr Cys Glu Gln Ala Gln Leu
    50                  55                  60
Leu Ala Asn Leu Ala Arg Leu Ile Gln Ala Lys Lys Ala Leu Asp Leu
65                  70                  75                  80
Gly Thr Phe Thr Gly Tyr Ser Ala Leu Ala Leu Ala Leu Ala Leu Pro
                85                  90                  95
Ala Asp Gly Arg Val Val Thr Cys Glu Val Asp Ala Gln Pro Pro Glu
            100                 105                 110
Leu Gly Arg Pro Leu Trp Arg Gln Ala Glu Ala Glu His Lys Ile Arg
        115                 120                 125
Leu Arg Leu Lys Pro Ala Leu Glu Thr Leu Asp Glu Leu Leu Ala Ala
    130                 135                 140
Gly Glu Ala Gly Thr Phe Asp Val Ala Val Val Asp Ala Asp Lys Glu
145                 150                 155                 160
Asn Cys Ser Ala Tyr Tyr Glu Arg Cys Leu Gln Leu Leu Arg Pro Gly
                165                 170                 175
Gly Ile Leu Ala Val Leu Arg Val Leu Trp Arg Gly Lys Val Leu Gln
            180                 185                 190
Pro Pro Lys Gly Asp Val Ala Ala Glu Cys Val Arg Asn Leu Asn Glu
        195                 200                 205
Arg Ile Arg Arg Asp Val Arg Val Tyr Ile Ser Leu Leu Pro Leu Gly
    210                 215                 220
Asp Gly Leu Thr Leu Ala Phe Lys Ile
225                 230

<210> 4379
<211> 2347

<212> DNA
<213> Homo sapiens

<400> 4379
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120
ggggaggacc cggtccccac ctgcctcacc cgcacggggc tgttcctgcg tttcctctgc
180
agccggttcc cgcggggcgc acagctgcgg ggcgcgctgc ggacgctgag cctcctggcc
240
gcgcagggcc tgtgggcgca gacgtccgtg cttcaccgag aggatctgga aaggctcggg
300
gtgcaggagt ccgacctccg tctgttcctg gacggagaca tcctccgcca ggacagagtc
360
tccaaaggct gctactcctt catccacctc agcttccagc agtttctcac tgccctgttc
420
tacaccctgg agaaggagga ggaagaggat agggacggcc acctgggca cattggggac
480
gtacagaagc tgctttccgg agtagaaaga ctcaggaacc ccgacctgat ccaagcaggc
540
tactactcct ttggcctcgc taacgagaag agagccaagg agttggaggc cacttttggc
600
tgccggatgt caccggacat_caaacaggaa ttgctgcgat gcgacataag ttgtaagggt
660
ggacattcaa cggtgacaga cctgcaggag ctgctcggct gtctgtacga gtctcaggag
720
gaggagctgg tgaaggaggt gatggctcag ttcaaagaaa tatccctgca cttaaatgca
780
gtagacgttg tgccatcttc attctgcgtc aagcactgtc gaaacctgca gaaaatgtca
840
ctgcaggtaa taaaggagaa tctcccggag aatgtcactg cgtctgaatc agacgccgag
900
gttgagagat cccaggatga tcagcacatg cttcctttct ggacggacct ttgttccata
960
tttggatcaa ataaggatct gatgggtcta gcaatcaatg atagctttct cagtgcctcc
1020
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1080
ttcaaaaaca tttccccagc tgatgctcat cggaacctcn tgcctnnagc tcttcgaggt
1140
cacaagactg taacgtatct gacccttcaa ggcaatgacc aggatgatat gtttcccgca
1200
ttgtgtgagg tcttgagaca tccagaatgt aacctgcgat atctcgggtt ggtgtcttgt
1260
tccgctacca ctcagcagtg ggctgatctc tccttggccc ttgaagtcaa ccagtccctg
1320
acgtgcgtaa acctctccga caatgagctt ctggatgagg gtgctaagtt gctgtacaca
1380
actttgagac accccaagtg ctttctgcag aggttgtcgt tggaaaactg tcaccttaca
1440
gaagccaatt gcaaggacct tgctgctgtg ttggttgtca gccgggagct gacacacctg
1500

3569

tgcttggcca agaaccccat tgggaataca ggggtgaagt ttctgtgtga gggcttgagg
1560
taccccgagt gtaaactgca gaccttggtg ctttggaact gcgacataac tagcgatggc
1620
tgctgcgatc tcacaaagct tctccaagaa aaatcaagcc tgttgtgttt ggatctgggg
1680
ctgaatcaca taggagttaa gggaatgaag ttcctgtgtg aggctttgag gaaaccactg
1740
tgcaacttga gatgtctgtg gttgtgggga tgttccatcc ctccgttcag ttgtgaagac
1800
gtctgctctg ccctcagctg caaccagagc ctcgtcactc tggacctggg tcagaatccc
1860
ttggggtcta gtggagtgaa gatgctgttt gaaaccttga catgttccag tggcaccctc
1920
cggacactca ggttgaaaat agatgacttt aatgatgaac tcaataagct gctggaagaa
1980
atagaagaaa aaacccaca actgattatt gatactgaga aacatcatcc ctgggaagaa
2040
aggccttctt ctcatgactt catgatctga atccccccga gtcattcatt ctccatgaag
2100
tcatcgattt tccaggtgtg ggtgaactgc ctgtgactcc tctcctcccc cgcccctacc
2160
cctcagggat aatgagttca ttgctgggct agatgtttta gccatgattc tgcctctgtt
2220
ttatacctgc acacatcctt atctttgtta catatgaaat atctgtatca cgggtatatt
2280
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2340
aaaaaaa
2347


<210> 4380
<211> 652
<212> PRT
<213> Homo sapiens

<400> 4380
Met Glu Lys Gly Glu Asp Pro Val Pro Thr Cys Leu Thr Arg Thr Gly
1               5                   10                  15
Leu Phe Leu Arg Phe Leu Cys Ser Arg Phe Pro Arg Gly Ala Gln Leu
            20                  25                  30
Arg Gly Ala Leu Arg Thr Leu Ser Leu Leu Ala Ala Gln Gly Leu Trp
        35                  40                  45
Ala Gln Thr Ser Val Leu His Arg Glu Asp Leu Glu Arg Leu Gly Val
    50                  55                  60
Gln Glu Ser Asp Leu Arg Leu Phe Leu Asp Gly Asp Ile Leu Arg Gln
65                  70                  75                  80
Asp Arg Val Ser Lys Gly Cys Tyr Ser Phe Ile His Leu Ser Phe Gln
                85                  90                  95
Gln Phe Leu Thr Ala Leu Phe Tyr Thr Leu Glu Lys Glu Glu Glu Glu
                100                 105                 110
Asp Arg Asp Gly His Thr Trp Asp Ile Gly Asp Val Gln Lys Leu Leu
            115                 120                 125
Ser Gly Val Glu Arg Leu Arg Asn Pro Asp Leu Ile Gln Ala Gly Tyr

3570

```
        130                    135                    140
Tyr Ser Phe Gly Leu Ala Asn Glu Lys Arg Ala Lys Glu Leu Glu Ala
145                    150                    155                    160
Thr Phe Gly Cys Arg Met Ser Pro Asp Ile Lys Gln Glu Leu Leu Arg
                165                    170                    175
Cys Asp Ile Ser Cys Lys Gly Gly His Ser Thr Val Thr Asp Leu Gln
                180                    185                    190
Glu Leu Leu Gly Cys Leu Tyr Glu Ser Gln Glu Glu Glu Leu Val Lys
            195                    200                    205
Glu Val Met Ala Gln Phe Lys Glu Ile Ser Leu His Leu Asn Ala Val
        210                    215                    220
Asp Val Val Pro Ser Ser Phe Cys Val Lys His Cys Arg Asn Leu Gln
225                    230                    235                    240
Lys Met Ser Leu Gln Val Ile Lys Glu Asn Leu Pro Glu Asn Val Thr
                245                    250                    255
Ala Ser Glu Ser Asp Ala Glu Val Glu Arg Ser Gln Asp Asp Gln His
                260                    265                    270
Met Leu Pro Phe Trp Thr Asp Leu Cys Ser Ile Phe Gly Ser Asn Lys
            275                    280                    285
Asp Leu Met Gly Leu Ala Ile Asn Asp Ser Phe Leu Ser Ala Ser Leu
        290                    295                    300
Val Arg Ile Leu Cys Glu Gln Ile Ala Ser Asp Thr Cys His Leu Gln
305                    310                    315                    320
Arg Val Val Phe Lys Asn Ile Ser Pro Ala Asp Ala His Arg Asn Leu
                325                    330                    335
Xaa Pro Xaa Ala Leu Arg Gly His Lys Thr Val Thr Tyr Leu Thr Leu
            340                    345                    350
Gln Gly Asn Asp Gln Asp Asp Met Phe Pro Ala Leu Cys Glu Val Leu
            355                    360                    365
Arg His Pro Glu Cys Asn Leu Arg Tyr Leu Gly Leu Val Ser Cys Ser
        370                    375                    380
Ala Thr Thr Gln Gln Trp Ala Asp Leu Ser Leu Ala Leu Glu Val Asn
385                    390                    395                    400
Gln Ser Leu Thr Cys Val Asn Leu Ser Asp Asn Glu Leu Leu Asp Glu
                405                    410                    415
Gly Ala Lys Leu Leu Tyr Thr Thr Leu Arg His Pro Lys Cys Phe Leu
            420                    425                    430
Gln Arg Leu Ser Leu Glu Asn Cys His Leu Thr Glu Ala Asn Cys Lys
            435                    440                    445
Asp Leu Ala Ala Val Leu Val Val Ser Arg Glu Leu Thr His Leu Cys
        450                    455                    460
Leu Ala Lys Asn Pro Ile Gly Asn Thr Gly Val Lys Phe Leu Cys Glu
465                    470                    475                    480
Gly Leu Arg Tyr Pro Glu Cys Lys Leu Gln Thr Leu Val Leu Trp Asn
                485                    490                    495
Cys Asp Ile Thr Ser Asp Gly Cys Cys Asp Leu Thr Lys Leu Leu Gln
            500                    505                    510
Glu Lys Ser Ser Leu Leu Cys Leu Asp Leu Gly Leu Asn His Ile Gly
            515                    520                    525
Val Lys Gly Met Lys Phe Leu Cys Glu Ala Leu Arg Lys Pro Leu Cys
        530                    535                    540
Asn Leu Arg Cys Leu Trp Leu Trp Gly Cys Ser Ile Pro Pro Phe Ser
545                    550                    555                    560
Cys Glu Asp Val Cys Ser Ala Leu Ser Cys Asn Gln Ser Leu Val Thr
```

```
                       565                570                   575
     Leu Asp Leu Gly Gln Asn Pro Leu Gly Ser Ser Gly Val Lys Met Leu
                   580                585                   590
     Phe Glu Thr Leu Thr Cys Ser Ser Gly Thr Leu Arg Thr Leu Arg Leu
               595                600                   605
     Lys Ile Asp Asp Phe Asn Asp Glu Leu Asn Lys Leu Leu Glu Glu Ile
           610                615                   620
     Glu Glu Lys Asn Pro Gln Leu Ile Ile Asp Thr Glu Lys His His Pro
     625                630                   635                640
     Trp Glu Glu Arg Pro Ser Ser His Asp Phe Met Ile
                   645                650
```

<210> 4381
<211> 1638
<212> DNA
<213> Homo sapiens

<400> 4381
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nnagagcccg gggcgagtgg gcctctgctc gtgggtggtt ctcgtggagg tcagctcccg
60
cgtgtctccg ctcgacaggg tgcttgggca gagcccatcg ggtaggcgcg ggccatggcg
120
cagtacaagg gcaccatgcg cgaggcaggc cgtgccatgc acctcctcaa gaagcgcgaa
180
aggcagcggg agcagatgga ggtgctgaag cagcgcatcg ccgaggagac catcctcaag
240
tcgcaggtgg acaagaggtt ctcggcgcat tacgacgccg tggaggccga gctgaagtcc
300
agcgcggtgg gcctggtgac cctgaacgac atgaaggccc ggcaggaggc cctggtcagg
360
gagcgcgagc ggcagctggc caagcgccag cacctggagg agcagcggct gcagcaggag
420
cggcagcggg agcaggagca gcggcgcgag cgcaagcgta agatctcctg cctgtccttt
480
gcactagacg acctcgatga ccaggccgac gcggccgagg ccaggcgcgc cggaaacctg
540
ggcaagaacc ccgacgtgga caccagcttc ctgccagacc gcgaccgcga ggaggaggag
600
aaccggctcc gagaggagct gcgccaagag tgggaggcgc agcgcgagaa agtgaaggac
660
gaggagatgg aggtcacctt cagctactgg gacggctcgg gccaccggcg cacggtgcgg
720
gtgcgcaagg gcaacacggt gcagcagttc ctgaagaagg cgctgcaggg gctgcgcaag
780
gacttcctgg agctgcgctc cgccggcgtg gagcagctca tgttcatcaa ggaggacctc
840
atcctgccgc actaccacac cttctacgac ttcatcatcg ccagggcgag gggcaagagc
900
gggccgctct tcagcttcga tgtgcacgat gacgtgcgcc tgctcagcga cgccaccatg
960
gagaaggacg agtcgcacgc gggcaaggtg gtgctgcgca gctggtacga gaagaacaag
1020
cacatcttcc ccgccagccg ctgggaggcc tatgaccccg agaagaagtg ggacaagtac
1080
```

```
accatccgct aacacccgcc tgccagagcg gaaaccgggg gtggggggag acactcattt
1140
ctaggcccca tcaccagtca cttgatttcg tgaccttgat ttcttccccc aaatttaata
1200
aagacagagg gttctcatga ttcacattgg ttgtgctatt gctgatgtta tgctttggtt
1260
gcttggttgg tcttttctga gtattttagt gttgccacct ggatttgctg cattgctctg
1320
ctgagctgta ttgaaaccat gactgggccc actgtcagac agaaattaga ataggaggca
1380
cattttttac ctggtggtta tgagcatgga cttgggggcc acagtgactg agtttgattc
1440
ccgacacagc ctcctccttg ctgtgtagtt ttgggtaagc ttattaaacc cccatgcctc
1500
agtttggtca cctgtaaaag gaaataacaa gagcacttac tttataagat tgatgtgagt
1560
attaagtgaa ttaatatttg taaaacgctt agctcttaat aaatgtttct gttgttatta
1620
aaaaaaaaaa aaaaaaaa
1638


<210> 4382
<211> 325
<212> PRT
<213> Homo sapiens

<400> 4382
Met Ala Gln Tyr Lys Gly Thr Met Arg Glu Ala Gly Arg Ala Met His
1               5                   10                  15
Leu Leu Lys Lys Arg Glu Arg Gln Arg Glu Gln Met Glu Val Leu Lys
                20                  25                  30
Gln Arg Ile Ala Glu Glu Thr Ile Leu Lys Ser Gln Val Asp Lys Arg
            35                  40                  45
Phe Ser Ala His Tyr Asp Ala Val Glu Ala Glu Leu Lys Ser Ser Ala
        50                  55                  60
Val Gly Leu Val Thr Leu Asn Asp Met Lys Ala Arg Gln Glu Ala Leu
65                  70                  75                  80
Val Arg Glu Arg Glu Arg Gln Leu Ala Lys Arg Gln His Leu Glu Glu
                85                  90                  95
Gln Arg Leu Gln Gln Glu Arg Gln Arg Glu Gln Glu Gln Arg Arg Glu
                100                 105                 110
Arg Lys Arg Lys Ile Ser Cys Leu Ser Phe Ala Leu Asp Asp Leu Asp
            115                 120                 125
Asp Gln Ala Asp Ala Ala Glu Ala Arg Arg Ala Gly Asn Leu Gly Lys
        130                 135                 140
Asn Pro Asp Val Asp Thr Ser Phe Leu Pro Asp Arg Asp Arg Glu Glu
145                 150                 155                 160
Glu Glu Asn Arg Leu Arg Glu Glu Leu Arg Gln Glu Trp Glu Ala Gln
                165                 170                 175
Arg Glu Lys Val Lys Asp Glu Glu Met Glu Val Thr Phe Ser Tyr Trp
                180                 185                 190
Asp Gly Ser Gly His Arg Arg Thr Val Arg Val Arg Lys Gly Asn Thr
            195                 200                 205
Val Gln Gln Phe Leu Lys Lys Ala Leu Gln Gly Leu Arg Lys Asp Phe
```

```
            210                    215                 220
Leu Glu Leu Arg Ser Ala Gly Val Glu Gln Leu Met Phe Ile Lys Glu
225                     230                 235                 240
Asp Leu Ile Leu Pro His Tyr His Thr Phe Tyr Asp Phe Ile Ile Ala
                    245                 250                 255
Arg Ala Arg Gly Lys Ser Gly Pro Leu Phe Ser Phe Asp Val His Asp
            260                 265                 270
Asp Val Arg Leu Leu Ser Asp Ala Thr Met Glu Lys Asp Glu Ser His
            275                 280                 285
Ala Gly Lys Val Val Leu Arg Ser Trp Tyr Glu Lys Asn Lys His Ile
            290                 295                 300
Phe Pro Ala Ser Arg Trp Glu Ala Tyr Asp Pro Glu Lys Lys Trp Asp
305                     310                 315                 320
Lys Tyr Thr Ile Arg
                325
```

```
<210> 4383
<211> 419
<212> DNA
<213> Homo sapiens
```

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<400> 4383
cgagatctgg cgtgttttat acagtttgaa aatgtcaaca tttactatgg gactcagcat
60
aaaatgaaat ataaagcgcc cactgactat tgctttgttt taaagcaccc ccaaattcag
120
aaggagtccc agtatatcaa gtatctctgc tgtgatgaca caagaaccct taaccagtgg
180
gtcatgggaa tacggatagc caagtatggg aagactctct atgataacta ccagcgggct
240
gtggcaaagg ctggacttgc ctctcggtgg acaaacttgg gacagtcaa tgcagctgca
300
ccagctcagc catttacagg acctaaaaca ggcaccaccc agcccaatgg acagattccc
360
caggctacac atttcttcag tgctgttctc caagaagccc agagacatgc tgaaaactn
419
```

```
<210> 4384
<211> 139
<212> PRT
<213> Homo sapiens
```

```
<400> 4384
Arg Asp Leu Ala Cys Phe Ile Gln Phe Glu Asn Val Asn Ile Tyr Tyr
1               5                   10                  15
Gly Thr Gln His Lys Met Lys Tyr Lys Ala Pro Thr Asp Tyr Cys Phe
            20                  25                  30
Val Leu Lys His Pro Gln Ile Gln Lys Glu Ser Gln Tyr Ile Lys Tyr
            35                  40                  45
Leu Cys Cys Asp Asp Thr Arg Thr Leu Asn Gln Trp Val Met Gly Ile
            50                  55                  60
Arg Ile Ala Lys Tyr Gly Lys Thr Leu Tyr Asp Asn Tyr Gln Arg Ala
65                  70                  75                  80
Val Ala Lys Ala Gly Leu Ala Ser Arg Trp Thr Asn Leu Gly Thr Val
```

```
                    85                    90                    95
Asn Ala Ala Ala Pro Ala Gln Pro Phe Thr Gly Pro Lys Thr Gly Thr
                100                  105                  110
Thr Gln Pro Asn Gly Gln Ile Pro Gln Ala Thr His Phe Phe Ser Ala
            115                  120                  125
Val Leu Gln Glu Ala Gln Arg His Ala Glu Asn
        130                  135
```

<210> 4385
<211> 754
<212> DNA
<213> Homo sapiens

<400> 4385

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ntttagagga gggtctgggc tagtttattt tctctctgga ggggtcttca gggagagcag
60
tcccggctgc tcaagcgggt gggaaggagc ggccactctt gctgaaaggt ggctgggaga
120
ggtcctggtc agagtcggag tcagagtccc aggaggggag tggagggctc aggcactggt
180
gccccttgtg gcctcttagg ctcgaggcct tgggacaggc ccccgagcac aaagtgaggc
240
tgtctatgga gttctgcagc acgtgcacag cagaccatat atcactcagt tccttctgga
300
ggtcatcctt ccagcagcca ctggctccct gcggtatctc ttcagtctcc ggacaggcgg
360
ctgtctcatg accctgctgc ttcatcttgg tcaggatttt gcggcatttc acctgcgttt
420
tctgcatttt ctgaatgttc accaagttct ctgagatctc atcctcctgc gcttcttcaa
480
gctgctgaat cttgatttgc tgcaagcagc tctccttctc caacatggtc actgagtggt
540
tcaggaactc gaaagccttg gtctgggcct gtaactggct cttgagtgac ccaagttcac
600
atcgcaggag cttctgggag tcgggaatca tcacaatggt cttggctttg actttggaag
660
agctggtctc caagggcttc acataccacc tgttcatgct ctcccatcag ggaccacgaa
720
gaaagtcctc agctgtgacg ctgaagtttg atca
754
```

<210> 4386
<211> 85
<212> PRT
<213> Homo sapiens

<400> 4386

```
Gly Cys Leu Trp Ser Ser Ala Ala Arg Ala Gln Gln Thr Ile Tyr His
1               5                   10                  15
Ser Val Pro Ser Gly Gly His Pro Ser Ser Ser His Trp Leu Pro Ala
            20                  25                  30
Val Ser Leu Gln Ser Pro Asp Arg Arg Leu Ser His Asp Pro Ala Ala
        35                  40                  45
Ser Ser Trp Ser Gly Phe Cys Gly Ile Ser Pro Ala Phe Ser Ala Phe
```

```
        50                    55                    60
Ser Glu Cys Ser Pro Ser Ser Leu Arg Ser His Pro Pro Ala Leu Leu
65                    70                    75                    80
Gln Ala Ala Glu Ser
                85
```

<210> 4387
<211> 341
<212> DNA
<213> Homo sapiens

<400> 4387
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ggggggggcc ttcccatctt tttcccttt atgggggggg ggttttttaa aaaaaaaggg
60
gggcccccc aaaaggggg gggggggaagg gggtttccc acccccaaaaa acccccccc
120
cccccgggn ggggggggaag gggggggggg ttttcccccc ctccccccc ccctaaaaaa
180
aaaacccgga aaattttttt tccccccccc ccaaaaaaaa aaaaaaaacc gggggggcccc
240
ccttttttttg gggggggggg ttttttttttt ttttttttttt ttttttttttt tttttttttac
300
aaaacagaga atgtttattg tgccagaggg tggagtgtgc n
341
```

<210> 4388
<211> 113
<212> PRT
<213> Homo sapiens

<400> 4388
```
Gly Gly Gly Leu Pro Ile Phe Phe Pro Phe Met Gly Gly Gly Phe Phe
  1               5                   10                  15
Lys Lys Lys Gly Gly Pro Pro Gln Lys Gly Gly Gly Gly Arg Gly Phe
                20                  25                  30
Ser His Pro Lys Lys Pro Pro Pro Pro Gly Xaa Gly Gly Arg Gly
            35                  40                  45
Gly Gly Phe Phe Pro Pro Pro Pro Pro Lys Lys Lys Thr Arg Lys
    50                  55                  60
Ile Phe Phe Pro Pro Pro Pro Lys Lys Lys Lys Lys Pro Gly Gly Pro
65                  70                  75                  80
Pro Phe Phe Gly Gly Gly Gly Phe Phe Phe Phe Phe Phe Phe Phe
                85                  90                  95
Phe Phe Phe Tyr Lys Thr Glu Asn Val Tyr Cys Ala Arg Gly Trp Ser
            100                 105                 110
Val
```

<210> 4389
<211> 1895
<212> DNA
<213> Homo sapiens

<400> 4389

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gctgccgagg gccgcgcggt gtacgtggtg gacgacgcag ctgtcctggg cgcagaggac
120
ccagcggtgt acggcgattc tgcccgtgag aaggcattgc gtggagctct gcgagcctcc
180
gtggaacgac gcctgagtcg ccacgacgtc gtcatcctgg actcgcttaa ctacatcaaa
240
ggtttccgtt acgagctcta ctgcctggca cgggcggcgc gcaccccgct ctgcctggtc
300
tactgcgtac ggcccggcgg cccgatcgcg ggacctcagg tggcgggcgc gaacgagaac
360
cctggccgga acgtcagtgt gagttggcgg ccacgcgctg aggaggacgg gagagcccag
420
gcggcgggca gcagcgtcct cagggaactg catactgcgg actctgtagt aaatggaagt
480
gcccaggccg acgtacccaa ggaactggag cgagaagaat ccggggctgc ggagtctcca
540
gctcttgtga ctccggattc agagaaatct gcaaagcatg ggtccggtgc cttttactct
600
cccgaactcc tggaggccct aacgctgcgc tttgaggctc ccgattctcg gaatcgctgg
660
gaccggcctt tattcacttt ggtgggcata gaggagccgt tgcccccggc ggggatccgc
720
tctgccctgt ttgagaaccg ggccccacca ccccatcagt ctacgcagtc ccagcccctc
780
gcctccggca gctttctgca ccagttggac caggtcacga gtcaagtact ggccggattg
840
atggaagcgc agaagagcgc tgtccccggg gacttgctca cgcttcctgg taccacagag
900
cacttgcggt ttacccggcc cttgaccatg gcagaactga gtcgccttcg tcgccagttt
960
atttcgtaca ctaaaatgca tcccaacaat gagaacttgc cgcaactggc caacatgttt
1020
cttcagtatt tgagccagag cctgcactaa ccagaggagg tagggggaa gccatggctt
1080
ctgatctcca ctccactta tttctctggg aaaaataggc tgcaggtctc cagagcatat
1140
cgatgcagta ctgtactaga gctgttgtga ctgattcact caaactttcc tgcatacccc
1200
tgtgccaggc cttgggttta cagcataagt tcagactaaa gagaatggag aactattgtg
1260
gtgcaacctg gcaaatccct cagaggacag agctaaggtg gacagggatt acctagattg
1320
gatcctactt gggctatcac agagcattga ccattggctt ccctcatctg aggcgtggga
1380
gagcagactg gatagatgag aattgtttta aaacaattgt gaacagaaac tgaagatggt
1440
acagttctac atctgcacct gccctttttt cataccacaa aagtattttt tgagtactgt
1500
actgactttt tgctagtttc tattctggga ccgagttcac agataaatcc attggtttgt
1560
atccttgaga aactttgttt ttgtggaagt aagaaagtta tctactagat tatttcctct
1620
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aataaaatct tttaaaatag tctactggaa tctctttcac ttaatgttcc ctgtgtaact
1680
tcatgtaaca ttttaggtat acttgtcatt gttctgcctt taagtgaagt agtattttga
1740
tagttctgag agagtagatg ttttgagcta ctctacagta attatattat gacaatttcc
1800
gtaactgttt tgcttcattc tgcatttcaa ggcaaatatc attgtaagct tgtctttcat
1860
tcttcattga tttcattgaa caaatggtag gtacc
1895

<210> 4390
<211> 335
<212> PRT
<213> Homo sapiens

<400> 4390
Arg Val Ala Arg Gly Val Ala Ala Glu Gly Arg Ala Val Tyr Val Val
1   5   10   15
Asp Asp Ala Ala Val Leu Gly Ala Glu Asp Pro Ala Val Tyr Gly Asp
            20   25   30
Ser Ala Arg Glu Lys Ala Leu Arg Gly Ala Leu Arg Ala Ser Val Glu
        35   40   45
Arg Arg Leu Ser Arg His Asp Val Val Ile Leu Asp Ser Leu Asn Tyr
    50   55   60
Ile Lys Gly Phe Arg Tyr Glu Leu Tyr Cys Leu Ala Arg Ala Ala Arg
65   70   75   80
Thr Pro Leu Cys Leu Val Tyr Cys Val Arg Pro Gly Gly Pro Ile Ala
                85   90   95
Gly Pro Gln Val Ala Gly Ala Asn Glu Asn Pro Gly Arg Asn Val Ser
            100   105   110
Val Ser Trp Arg Pro Arg Ala Glu Glu Asp Gly Arg Ala Gln Ala Ala
        115   120   125
Gly Ser Ser Val Leu Arg Glu Leu His Thr Ala Asp Ser Val Val Asn
    130   135   140
Gly Ser Ala Gln Ala Asp Val Pro Lys Glu Leu Glu Arg Glu Glu Ser
145   150   155   160
Gly Ala Ala Glu Ser Pro Ala Leu Val Thr Pro Asp Ser Glu Lys Ser
                165   170   175
Ala Lys His Gly Ser Gly Ala Phe Tyr Ser Pro Glu Leu Leu Glu Ala
            180   185   190
Leu Thr Leu Arg Phe Glu Ala Pro Asp Ser Arg Asn Arg Trp Asp Arg
        195   200   205
Pro Leu Phe Thr Leu Val Gly Ile Glu Glu Pro Leu Pro Pro Ala Gly
    210   215   220
Ile Arg Ser Ala Leu Phe Glu Asn Arg Ala Pro Pro Pro His Gln Ser
225   230   235   240
Thr Gln Ser Gln Pro Leu Ala Ser Gly Ser Phe Leu His Gln Leu Asp
                245   250   255
Gln Val Thr Ser Gln Val Leu Ala Gly Leu Met Glu Ala Gln Lys Ser
            260   265   270
Ala Val Pro Gly Asp Leu Leu Thr Leu Pro Gly Thr Thr Glu His Leu
        275   280   285
Arg Phe Thr Arg Pro Leu Thr Met Ala Glu Leu Ser Arg Leu Arg Arg

```
       290                   295                   300
Gln Phe Ile Ser Tyr Thr Lys Met His Pro Asn Asn Glu Asn Leu Pro
305                   310                   315                   320
Gln Leu Ala Asn Met Phe Leu Gln Tyr Leu Ser Gln Ser Leu His
                325                   330                   335
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<210> 4391
<211> 988
<212> DNA
<213> Homo sapiens

<400> 4391

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120
ggaggtggca tgcgaccccc acccaactcc ctcgccggcc caggcctgcc tgccatgaac
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atgggcccag gagttcgtgg cccgtgggcc agccccagtg gaaactcgat cccctactcc
240
tcctcatccc ccggcagcta caccggaccc caggaggag gtgggccccc tggaacaccc
300
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360
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420
atggccgcca tgagcgcgat ggagcctcac cacgtgaacg gatccctggg ctcgggcgac
480
atggacgggt tgccgaagag ttcccccggc gccgtggccg gcctgagcaa cgccccgggc
540
accccgcggg acgacggcga gatggcggcc gcgggacct tcctgcaccc gttcccgagc
600
gaaagctact cgccagggat gaccatgagc gtgtgatggg gcggcagccc cgggcctctc
660
tgcgggccta ggcttctgcc cagcgcccct gctcagggcg aggggctgag gtcacacctc
720
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780
tcttaccatt ttattaaaaa cgcaaggacc tcagagacgt tcttttctgt atggaccctt
840
cctgccattt gtattttgtc ccagagagaa aggctctttg gggggcccct ctccccagga
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960
aaaaaaaaaa aaaaaaaaaa aaaaaaa
988
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<210> 4392
<211> 211
<212> PRT
<213> Homo sapiens

<400> 4392
Xaa Pro Phe Ser Trp Pro His Gly Ala Ser Pro Arg Ala Gln Gly His

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Pro Ser Met Gly Gly Pro Met Gln Arg Val Thr Pro Pro Arg Gly Met
             20                  25                  30
Ala Ser Val Gly Pro Gln Ser Tyr Gly Gly Gly Met Arg Pro Pro Pro
         35                  40                  45
Asn Ser Leu Ala Gly Pro Gly Leu Pro Ala Met Asn Met Gly Pro Gly
     50                  55                  60
Val Arg Gly Pro Trp Ala Ser Pro Ser Gly Asn Ser Ile Pro Tyr Ser
65                  70                  75                  80
Ser Ser Ser Pro Gly Ser Tyr Thr Gly Pro Pro Gly Gly Gly Gly Pro
                 85                  90                  95
Pro Gly Thr Pro Ile Met Pro Ser Pro Gly Asp Ser Thr Asn Ser Ser
             100                 105                 110
Glu Asn Met Tyr Thr Ile Met Asn Pro Ile Gly Gln Gly Ala Gly Arg
         115                 120                 125
Ala Asn Phe Pro Leu Gly Pro Gly Pro Glu Gly Pro Met Ala Ala Met
     130                 135                 140
Ser Ala Met Glu Pro His His Val Asn Gly Ser Leu Gly Ser Gly Asp
145                 150                 155                 160
Met Asp Gly Leu Pro Lys Ser Ser Pro Gly Ala Val Ala Gly Leu Ser
             165                 170                 175
Asn Ala Pro Gly Thr Pro Arg Asp Asp Gly Glu Met Ala Ala Ala Gly
         180                 185                 190
Thr Phe Leu His Pro Phe Pro Ser Glu Ser Tyr Ser Pro Gly Met Thr
     195                 200                 205
Met Ser Val
     210


<210> 4393
<211> 2171
<212> DNA
<213> Homo sapiens

<400> 4393
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120
gtggcccggg agcaggtgga cccggagcgg agctccctg ccctgggcgt ggcgggccgc
180
tcccgggaga agctgcagcg ggtgctggag aaggcggccc tgaagctggg aagaccaaca
240
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300
atggctaaac aggcaacagt tgtcctcaat tgcgtaggac catatcggtt ttatggagaa
360
cctgtaataa aagcatgtat tgaaaatgga gccagttgta tcgacatcag tggagaacct
420
cagtttctgg aactaatgca actgaagtat catgagaaag ctgcagacaa aggggtttat
480
atcattggaa gcagcggctt tgactccatt ccagcagatc tgggagtaat atataccaga
540
aataaaatga atggtacttt gactgctgtg gaaagtttcc tgactataca ttcaggacct
600
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gaggggttga gcattcatga tggtacctgg aagtcagcaa tttatggttt tggagatcag
660
agtaatttga gaaaactaag aaatgtatca aatctgaaac ctgtcccgct cattggtcca
720
aaattgaaga gaaggtggcc aatttcttat tgtcgggaac tcaaaggtta ttccattcct
780
tttatgggat ctgatgtgtc tgttgtaagg aggactcaac gttacttgta tgaaaattta
840
gaggaatcac cagttcagta tgctgcgtat gtaactgtgg gaggcatcac ctctgttatt
900
aagctgatgt ttgcaggact tttctttttg ttctttgtga ggtttggaat tggaaggcaa
960
cttctcataa aattcccatg gttcttctcc tttggctatt tttcaaaaca aggcccaaca
1020
caaaaacaga ttgatgctgc ctcattcacg ctgacattct ttggtcaagg atacagccaa
1080
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1140
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1200
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1260
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1320
gaagtctaaa cactggaaga attaactgaa gtcataacgt gcgtgaatta acagcttctc
1380
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1440
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1500
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1560
ttcattgatg tgttcctggt agattttcac gaatgagctg gcaggtctaa tgggggaggc
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1680
tcgggcagta actgccgctt gccttgccgc agtaggaggg aaatctcacc ttccttccac
1740
atactgtctt gagcctttgc taaattaaac tgcacttttt gctgtttttg cctagttttt
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1860
aatggtggtt taatgtttgg acctgccgat gtatttgtat agtggtagaa acatgctgct
1920
taagtggcct aacctgtttc ttgccaataa gtaggcttat cattttatct ttacgtaatt
1980
ctatatctgt gactaggttt ttaaggatac agcttataag ttgctatcaa ttttcactac
2040
ctaagcagaa tttttctcta atttactttt tgtattttaa ctaggtttta catggaagcc
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2160
tagcaaattg a
2171
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<210> 4394
<211> 428
<212> PRT
<213> Homo sapiens

<400> 4394

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Met Ala Thr Glu Gln Arg Pro Phe His Leu Val Val Phe Gly Ala Ser
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Gly Phe Thr Gly Gln Phe Val Thr Glu Glu Val Ala Arg Glu Gln Val
            20              25              30
Asp Pro Glu Arg Ser Ser Pro Ala Leu Gly Val Ala Gly Arg Ser Arg
        35              40              45
Glu Lys Leu Gln Arg Val Leu Glu Lys Ala Ala Leu Lys Leu Gly Arg
    50              55              60
Pro Thr Leu Ser Ser Glu Val Gly Ile Ile Ile Cys Asp Ile Ala Asn
65              70              75              80
Pro Ala Ser Leu Asp Glu Met Ala Lys Gln Ala Thr Val Val Leu Asn
            85              90              95
Cys Val Gly Pro Tyr Arg Phe Tyr Gly Glu Pro Val Ile Lys Ala Cys
            100             105             110
Ile Glu Asn Gly Ala Ser Cys Ile Asp Ile Ser Gly Glu Pro Gln Phe
        115             120             125
Leu Glu Leu Met Gln Leu Lys Tyr His Glu Lys Ala Ala Asp Lys Gly
    130             135             140
Val Tyr Ile Ile Gly Ser Ser Gly Phe Asp Ser Ile Pro Ala Asp Leu
145             150             155             160
Gly Val Ile Tyr Thr Arg Asn Lys Met Asn Gly Thr Leu Thr Ala Val
            165             170             175
Glu Ser Phe Leu Thr Ile His Ser Gly Pro Glu Gly Leu Ser Ile His
            180             185             190
Asp Gly Thr Trp Lys Ser Ala Ile Tyr Gly Phe Gly Asp Gln Ser Asn
    195             200             205
Leu Arg Lys Leu Arg Asn Val Ser Asn Leu Lys Pro Val Pro Leu Ile
    210             215             220
Gly Pro Lys Leu Lys Arg Arg Trp Pro Ile Ser Tyr Cys Arg Glu Leu
225             230             235             240
Lys Gly Tyr Ser Ile Pro Phe Met Gly Ser Asp Val Ser Val Val Arg
            245             250             255
Arg Thr Gln Arg Tyr Leu Tyr Glu Asn Leu Glu Glu Ser Pro Val Gln
            260             265             270
Tyr Ala Ala Tyr Val Thr Val Gly Gly Ile Thr Ser Val Ile Lys Leu
    275             280             285
Met Phe Ala Gly Leu Phe Phe Leu Phe Phe Val Arg Phe Gly Ile Gly
    290             295             300
Arg Gln Leu Leu Ile Lys Phe Pro Trp Phe Phe Ser Phe Gly Tyr Phe
305             310             315             320
Ser Lys Gln Gly Pro Thr Gln Lys Gln Ile Asp Ala Ala Ser Phe Thr
            325             330             335
Leu Thr Phe Phe Gly Gln Gly Tyr Ser Gln Gly Thr Gly Thr Asp Lys
            340             345             350
Asn Lys Pro Asn Ile Lys Ile Cys Thr Gln Val Lys Gly Pro Glu Ala
    355             360             365
Gly Tyr Val Ala Thr Pro Ile Ala Met Val Gln Ala Ala Met Thr Leu
```

```
      370                 375                 380
Leu Ser Asp Ala Ser His Leu Pro Lys Ala Gly Gly Val Phe Thr Pro
385                 390                 395                 400
Gly Ala Ala Phe Ser Lys Thr Lys Leu Ile Asp Arg Leu Asn Lys His
                405                 410                 415
Gly Ile Glu Phe Ser Val Ile Ser Ser Ser Glu Val
                420                 425
```

<210> 4395
<211> 1893
<212> DNA
<213> Homo sapiens

<400> 4395

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120
ccttctcctc tgcaggcgct gaggatcacg catcctgtga ctctcccctg tcccccgcca
180
ccctctgaac cactggccac catggctact tcaaagttgc ccgtggtgcc tggggaggag
240
gaaaacacca tccttatggc caaggaaagg ctggaggccc tgcgcacagc ctttgagtcg
300
ggtgacctcc cccaggccgc ctctcacctc caggagctgc tggcctccac ggaaagcatc
360
cgcctggagg tgggcgtcac gggcgagtcg ggcgcgggca gtcctccct catcaatgcc
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atgcaaccgt cgccctatcc acacccacag ttccctgacg tgaccctctg ggacctgcca
540
ggagccggct ctccaggctg cccggctgac aagtacctaa agcaggtaga cttcagccgc
600
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660
gctgagatcc tgtgccaggg caagaagttc tactttgtgc gcaccaaggt ggacgaggac
720
ctggcggcca cgcgcaccca gcggccgtcg ggcttcagag aggccgctgt cctgcaggag
780
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900
cacgacctgc cctcccaccg gcgccacgct ggcctgctgt cgctccccga catctcgctg
960
gaggccttgc agaagaagaa ggccatgctt caagagcaag tcctcaagac cgccctggtg
1020
ttgggcgtca tccaggccct gccggtccca gggctggcgg ccgcctacga tgatgcgttg
1080
ctcatccact cactgcgtgg ctaccaccgc agctttggtc tggacgacga ctcgctggcc
1140
aagctggccg agcaggtggg caaacaggca ggtgacctgc gctcggtcat ccgctcccca
1200
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ctggccaacg aggtctcgcc tgagactgtc ctgcggctct attcccagtc gtccgacggc
1260
gccatgcggg tggcccgcgc ctttgagagg ggcatccctg tgtttgggac gctggtggct
1320
ggcggcatca gctttggcgc tgtctacacc atgctccagg gctgcctcaa cgagatggct
1380
gaggacgccc agcgtgtccg catcaaggcc ctggaggatg acgagccgca gccggaggtc
1440
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1500
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1560
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1620
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1680
gtgagggctg cagttgcctg gggggtgggt gtggagggag cctgtgtccc tggcaggcag
1740
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1800
ggtgggccca gggccaacag gggtgtagtg aaaggggaca ggagtgccct ggagagggag
1860
gttggagaca tggatggtgg gcccagggtt ccc
1893


<210> 4396
<211> 463
<212> PRT
<213> Homo sapiens

<400> 4396
Met Ala Thr Ser Lys Leu Pro Val Val Pro Gly Glu Glu Glu Asn Thr
1               5                   10                  15
Ile Leu Met Ala Lys Glu Arg Leu Glu Ala Leu Arg Thr Ala Phe Glu
            20                  25                  30
Ser Gly Asp Leu Pro Gln Ala Ala Ser His Leu Gln Glu Leu Leu Ala
        35                  40                  45
Ser Thr Glu Ser Ile Arg Leu Glu Val Gly Val Thr Gly Glu Ser Gly
    50                  55                  60
Ala Gly Lys Ser Ser Leu Ile Asn Ala Leu Arg Gly Leu Glu Ala Glu
65                  70                  75                  80
Asp Pro Gly Ala Ala Leu Thr Gly Val Met Glu Thr Thr Met Gln Pro
                85                  90                  95
Ser Pro Tyr Pro His Pro Gln Phe Pro Asp Val Thr Leu Trp Asp Leu
            100                 105                 110
Pro Gly Ala Gly Ser Pro Gly Cys Pro Ala Asp Lys Tyr Leu Lys Gln
            115                 120                 125
Val Asp Phe Ser Arg Tyr Asp Phe Phe Leu Leu Val Ser Pro Arg Arg
        130                 135                 140
Cys Gly Ala Val Glu Thr Arg Leu Ala Ala Glu Ile Leu Cys Gln Gly
145                 150                 155                 160
Lys Lys Phe Tyr Phe Val Arg Thr Lys Val Asp Glu Asp Leu Ala Ala
                165                 170                 175
Thr Arg Thr Gln Arg Pro Ser Gly Phe Arg Glu Ala Ala Val Leu Gln
```

```
            180                185                  190
Glu Ile Arg Asp His Cys Ala Glu Arg Leu Arg Glu Ala Gly Val Ala
        195                200                  205
Asp Pro Arg Ile Phe Leu Val Ser Asn Leu Ser Pro Ala Arg Tyr Asp
    210                215                  220
Phe Pro Thr Leu Val Ser Thr Trp Glu His Asp Leu Pro Ser His Arg
225                230                  235                  240
Arg His Ala Gly Leu Leu Ser Leu Pro Asp Ile Ser Leu Glu Ala Leu
            245                250                  255
Gln Lys Lys Lys Ala Met Leu Gln Glu Gln Val Leu Lys Thr Ala Leu
            260                265                  270
Val Leu Gly Val Ile Gln Ala Leu Pro Val Pro Gly Leu Ala Ala Ala
        275                280                  285
Tyr Asp Asp Ala Leu Leu Ile His Ser Leu Arg Gly Tyr His Arg Ser
    290                295                  300
Phe Gly Leu Asp Asp Asp Ser Leu Ala Lys Leu Ala Glu Gln Val Gly
305                310                  315                  320
Lys Gln Ala Gly Asp Leu Arg Ser Val Ile Arg Ser Pro Leu Ala Asn
            325                330                  335
Glu Val Ser Pro Glu Thr Val Leu Arg Leu Tyr Ser Gln Ser Ser Asp
    ..      340                345                  350
Gly Ala Met Arg Val Ala Arg Ala Phe Glu Arg Gly Ile Pro Val Phe
        355                360                  365
Gly Thr Leu Val Ala Gly Gly Ile Ser Phe Gly Ala Val Tyr Thr Met
    370                375                  380
Leu Gln Gly Cys Leu Asn Glu Met Ala Glu Asp Ala Gln Arg Val Arg
385                390                  395                  400
Ile Lys Ala Leu Glu Asp Asp Glu Pro Gln Pro Glu Val Ser Leu Glu
            405                410                  415
Val Ala Ser Asp Asn Gly Val Glu Lys Gly Gly Ser Gly Glu Gly Gly
            420                425                  430
Gly Glu Glu Ala Pro Leu Ser Thr Cys Arg Lys Leu Gly Leu Leu Leu
        435                440                  445
Lys Tyr Ile Leu Asp Ser Trp Lys Lys His Asp Ser Glu Glu Lys
    450                455                  460
```

<210> 4397
<211> 2543
<212> DNA
<213> Homo sapiens

<400> 4397
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120
agagcttgcg cctaccagga tcggcggggc cagcagcggc tcccggagtg gagggaccct
180
gataagtact gcccctctta caacaagagt cctcaatcca acagcccagt gcttctgtct
240
cgactgcact ttgagaagga tgcagactca tctgagcgta tcattgctcc catgcgctgg
300
ggcttggtcc cttcttggtt caaagaaagt gatccttcca agctgcagtt caatactacc
360

                                3585

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aactgtcgta gtgataccgt aatggagaaa cggtcattta aggtgcctct gggaaaggga
420
agacgctgtg tcgttttagc agatggattc tatgagtggc agcgatgtca gggaacaaac
480
cagaggcagc catacttcat ctattttcct caaatcaaga cagagaagtc aggtagcatt
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720
atattagatg gagaggaggc agtttctaaa tggcttgact ttggtgaagt ctcaactcag
780
gaagctctga aattaatcca cccaacagag aacatcacct tccatgcagt ctcttctgtg
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900
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960
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1020
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1080
caatggctga agcgggagaa ggaggaggaa cctgtggcca agcgtcctta cagccagtga
1140
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1560
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1620
ttttggaaag tgatgctggt ggggaaagtt ctagatctta cttggtttct tctagaatca
1680
gtcttcagga atggattttg tcacaaatgg ggcatggggg ctttctgagg aaataactac
1740
aagtcttggt ggtgggctcc ttattatgtt tcttttttctt tcattcttga tacttggaag
1800
tcgtctgaat cctttagctt caaaccagcc tgagtttgag tgcttgccgt agcagaaact
1860
atccttacca caggtgggaa ggaaaggacc agtttctagc agtgtcgggc cactcctctt
1920
tcgaacatcc ctaagggagg cattcacaaa agctgtccca agcagctgga agaaaacagc
1980
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ttccgagatg accaggagga ctgggcggcg ccgagcccag aacgctcctg gcgcagcacc
2040
gttggcgttg gccgattgct gctggtgggg ggcggggggtg caggccccag tctctatgca
2100
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2160
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2220
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2520
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2543

<210> 4398
<211> 354
<212> PRT
<213> Homo sapiens

<400> 4398

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Met Cys Gly Arg Thr Ser Cys His Leu Pro Arg Asp Val Leu Thr Arg
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Ala Cys Ala Tyr Gln Asp Arg Arg Gly Gln Gln Arg Leu Pro Glu Trp
            20                  25                  30
Arg Asp Pro Asp Lys Tyr Cys Pro Ser Tyr Asn Lys Ser Pro Gln Ser
        35                  40                  45
Asn Ser Pro Val Leu Leu Ser Arg Leu His Phe Glu Lys Asp Ala Asp
        50                  55                  60
Ser Ser Glu Arg Ile Ile Ala Pro Met Arg Trp Gly Leu Val Pro Ser
65                  70                  75                  80
Trp Phe Lys Glu Ser Asp Pro Ser Lys Leu Gln Phe Asn Thr Thr Asn
                85                  90                  95
Cys Arg Ser Asp Thr Val Met Glu Lys Arg Ser Phe Lys Val Pro Leu
            100                 105                 110
Gly Lys Gly Arg Arg Cys Val Val Leu Ala Asp Gly Phe Tyr Glu Trp
        115                 120                 125
Gln Arg Cys Gln Gly Thr Asn Gln Arg Gln Pro Tyr Phe Ile Tyr Phe
        130                 135                 140
Pro Gln Ile Lys Thr Glu Lys Ser Gly Ser Ile Gly Ala Ala Asp Ser
145                 150                 155                 160
Pro Glu Asn Trp Glu Lys Val Trp Asp Asn Trp Arg Leu Leu Thr Met
                165                 170                 175
Ala Gly Ile Phe Asp Cys Trp Glu Pro Pro Glu Gly Gly Asp Val Leu
            180                 185                 190
Tyr Ser Tyr Thr Ile Ile Thr Val Asp Ser Cys Lys Gly Leu Ser Asp
        195                 200                 205
Ile His His Arg Met Pro Ala Ile Leu Asp Gly Glu Glu Ala Val Ser
```

```
       210                    215                    220
Lys Trp Leu Asp Phe Gly Glu Val Ser Thr Gln Glu Ala Leu Lys Leu
225                    230                    235                    240
Ile His Pro Thr Glu Asn Ile Thr Phe His Ala Val Ser Ser Val Val
                245                    250                    255
Asn Asn Ser Arg Asn Asn Thr Pro Glu Cys Leu Ala Pro Val Asp Leu
                260                    265                    270
Val Val Lys Lys Glu Leu Arg Ala Ser Gly Ser Ser Gln Arg Met Leu
                275                    280                    285
Gln Trp Leu Ala Thr Lys Ser Pro Lys Lys Glu Asp Ser Lys Thr Pro
                290                    295                    300
Gln Lys Glu Glu Ser Asp Val Pro Gln Trp Ser Ser Gln Phe Leu Gln
305                    310                    315                    320
Lys Ser Pro Leu Pro Thr Lys Arg Gly Thr Ala Gly Leu Leu Glu Gln
                325                    330                    335
Trp Leu Lys Arg Glu Lys Glu Glu Glu Pro Val Ala Lys Arg Pro Tyr
                340                    345                    350
Ser Gln
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<210> 4399
<211> 723
<212> DNA
<213> Homo sapiens

<400> 4399
gtgcaccgca tcaagcgcga gtgcgagcgc gacatccgca ggctgatgga tgagatcaaa
60
gggaaagacc gtgtgattct ggccttggag aaggaacttg gcgtgcaggc tgggcagacc
120
cagaagctgc ttctgcagaa agaggctttg gatgagcagc tggttcaggt caaggaggcc
180
gagcggcacc acagtagtcc aaagagagag ctcccgcccg ggatcgggga catggtggag
240
ctcatgggcg tccaggatca acatatggac gagcgagatg tgaggcgatt tcaactaaaa
300
attgctgaac tgaattcagt gatacggaag ctggaagaca gaaatacgct gttggcagat
360
gagaggaatg aactgctgaa acgctcacga gagaccgagg ttcagctgaa gcccctggtg
420
gagaagaaca gcggatgaa caagaagaat gaggatctgt tgcagagtat ccagaggatg
480
gaggagaaaa tcaagaacct cacgcgggaa aacgtggaaa tgaaagaaaa gctgtcagcg
540
caggcgtctc tgaagcggca tacctccttg aatgacctca gcctgacgag ggatgagcag
600
gagatcgagt tcctgaggct gcaggtgctg gagcagcagc acgtcattga cgacctctca
660
ctggagagag aacggctgtt gcgctccaaa aggcatcgag ggaaaagtct gaaaccgccc
720
aag
723

<210> 4400
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<211> 241
<212> PRT
<213> Homo sapiens

<400> 4400
Val His Arg Ile Lys Arg Glu Cys Glu Arg Asp Ile Arg Arg Leu Met
1               5                   10                  15
Asp Glu Ile Lys Gly Lys Asp Arg Val Ile Leu Ala Leu Glu Lys Glu
                20                  25                  30
Leu Gly Val Gln Ala Gly Gln Thr Gln Lys Leu Leu Leu Gln Lys Glu
        35                  40                  45
Ala Leu Asp Glu Gln Leu Val Gln Val Lys Glu Ala Glu Arg His His
    50                  55                  60
Ser Ser Pro Lys Arg Glu Leu Pro Pro Gly Ile Gly Asp Met Val Glu
65                  70                  75                  80
Leu Met Gly Val Gln Asp Gln His Met Asp Glu Arg Asp Val Arg Arg
                85                  90                  95
Phe Gln Leu Lys Ile Ala Glu Leu Asn Ser Val Ile Arg Lys Leu Glu
                100                 105                 110
Asp Arg Asn Thr Leu Leu Ala Asp Glu Arg Asn Glu Leu Leu Lys Arg
        115                 120                 125
Ser Arg Glu Thr Glu Val Gln Leu Lys Pro Leu Val Glu Lys Asn Lys
    130                 135                 140
Arg Met Asn Lys Lys Asn Glu Asp Leu Leu Gln Ser Ile Gln Arg Met
145                 150                 155                 160
Glu Glu Lys Ile Lys Asn Leu Thr Arg Glu Asn Val Glu Met Lys Glu
                165                 170                 175
Lys Leu Ser Ala Gln Ala Ser Leu Lys Arg His Thr Ser Leu Asn Asp
                180                 185                 190
Leu Ser Leu Thr Arg Asp Glu Gln Glu Ile Glu Phe Leu Arg Leu Gln
        195                 200                 205
Val Leu Glu Gln Gln His Val Ile Asp Asp Leu Ser Leu Glu Arg Glu
    210                 215                 220
Arg Leu Leu Arg Ser Lys Arg His Arg Gly Lys Ser Leu Lys Pro Pro
225                 230                 235                 240
Lys


<210> 4401
<211> 1131
<212> DNA
<213> Homo sapiens

<400> 4401
nncccgggta aacctctcta gcccattctc aataaagatt cacatagcta tagcacgact
60
atgcccatga tgatgtatca ttttatactt actggaatcc aagccaggct ggtttctaat
120
agaaaggtga tccaaggaat cacatgtgag aaaaacagtg ctctagcaaa gggatcctcg
180
aatcaaaggc atcgagaata ttttttaaata ctaatgcctt tttgctattt ccggggaaag
240
gctggattgt gctaccgacg ctcaatatcc atgcaccccg gatctggaag actttgccgg
300
```

cctgcagatt ggccttaaga gaaggacgga gccacatact gctgacggcc cagaactggc
360
agagagaagg ttgccatggc tgctgttgac agtttctacc tcttgtacag ggaaatcgcc
420
aggtcttgca attgctatat ggaagctcta gctttggttg gagcctggta tacggccaga
480
aaaagcatca ctgtcatctg tgacttttac agcctgatca ggctgcattt tatcccccgc
540
ctggggagca gagcagactt gatcaagcag tatggaagat gggccgttgt cagcggtgca
600
acagatggga ttggaaaagc ctacgctgaa gagttagcaa gccgaggtct caatataatc
660
ctgattagtc ggaacgagga gaagttgcag gttgttgcta aagacatagc cgacacgtac
720
aaagtggaaa ctgatattat agttgcggac ttcagcagcg tcgtgagat ctaccttcca
780
attcgagaag ccctgaagga caaagacgtt ggcatcttgg taaataacgt gggtgtgttt
840
tatcccctacc cgcagtattt cactcagctg tccgaggaca agctctggga catcataaat
900
gtgaacattg ccgccgctag tttgatggtc catgttgtgt taccgggaat ggtggagaga
960
aagaaaggtg ccatcgtcac gatctcttct gggctcctgc tgcaacccac tcctcagctg
1020
gctgcatttt ctgcttctaa ggcttattta gaccacttca gcagagcctt gcaatatgaa
1080
tatgcctcta aaggaatctt tgtacagagt ctaatncctt tctatgtagc c
1131

<210> 4402
<211> 252
<212> PRT
<213> Homo sapiens

<400> 4402
Met Ala Ala Val Asp Ser Phe Tyr Leu Leu Tyr Arg Glu Ile Ala Arg
1   5   10   15
Ser Cys Asn Cys Tyr Met Glu Ala Leu Ala Leu Val Gly Ala Trp Tyr
            20   25   30
Thr Ala Arg Lys Ser Ile Thr Val Ile Cys Asp Phe Tyr Ser Leu Ile
        35   40   45
Arg Leu His Phe Ile Pro Arg Leu Gly Ser Arg Ala Asp Leu Ile Lys
    50   55   60
Gln Tyr Gly Arg Trp Ala Val Val Ser Gly Ala Thr Asp Gly Ile Gly
65   70   75   80
Lys Ala Tyr Ala Glu Glu Leu Ala Ser Arg Gly Leu Asn Ile Ile Leu
                85   90   95
Ile Ser Arg Asn Glu Glu Lys Leu Gln Val Val Ala Lys Asp Ile Ala
            100   105   110
Asp Thr Tyr Lys Val Glu Thr Asp Ile Ile Val Ala Asp Phe Ser Ser
        115   120   125
Gly Arg Glu Ile Tyr Leu Pro Ile Arg Glu Ala Leu Lys Asp Lys Asp
    130   135   140
Val Gly Ile Leu Val Asn Asn Val Gly Val Phe Tyr Pro Tyr Pro Gln

```
145                    150                    155                    160
Tyr Phe Thr Gln Leu Ser Glu Asp Lys Leu Trp Asp Ile Ile Asn Val
                165                    170                    175
Asn Ile Ala Ala Ala Ser Leu Met Val His Val Val Leu Pro Gly Met
            180                    185                    190
Val Glu Arg Lys Lys Gly Ala Ile Val Thr Ile Ser Ser Gly Leu Leu
        195                    200                    205
Leu Gln Pro Thr Pro Gln Leu Ala Ala Phe Ser Ala Ser Lys Ala Tyr
    210                    215                    220
Leu Asp His Phe Ser Arg Ala Leu Gln Tyr Glu Tyr Ala Ser Lys Gly
225                    230                    235                    240
Ile Phe Val Gln Ser Leu Xaa Pro Phe Tyr Val Ala
                245                    250
```

<210> 4403
<211> 4237
<212> DNA
<213> Homo sapiens

<400> 4403
nggatccaag ccatattgat tgggctgcat tggcccaagc ttggattgcc cacaagagaa
60
gcttcaggac agcaaagcat ggtagaacaa ccaccaggaa tgatgccaaa tggacaagat
120
atgtctacaa tggaatctgg tccaaacaat catgggaatt ccaagggga ttcaaacttc
180
aacagaatgt ggcaaccaga tggggaatg catcagcaac ccccacaccc ccctccagat
240
cagccatgga tgccaccaac accaggccca atggacattg ttcctccttc tgaagacagc
300
aacagtcagg acagtgggga atttgcccct gacaacaggc atatatttaa ccagaacaat
360
cacaactttg gtggaccacc cgataatttt gcagtggggc cagtgaacca gtttgactat
420
cagcatgggg ctgcttttgg tccaccgcaa ggtggatttc atcctcctta ttggcaacca
480
ggacctccag gacctccagc acctccccag aatcgaagag aaaggccatc atcattcagg
540
gatcgtcagc gttcacctat tgcacttcct gtgaagcagg agcctccaca aattgacgca
600
gtaaaacgca ggactcttcc cgcttggatt cgcgaaggtc ttgaaaaaat ggaacgtgaa
660
aagcagaaga aattggagaa agaaagaatg gaacaacaac gttcacaatt gtccaaaaaa
720
aaaaaaaagg ccacagaaga tgctgaagga ggggatggcc ctcgtttacc tcagagaagt
780
aaatttgata gtgatgagga agaagaagac actgaaaatg ttgaggctgc aagtagtggg
840
aaagtcacca gaagtccatc cccagttcct caagaagagc acagtgaccc tgagatgact
900
gaagaggaga aagagtatca aatgatgttg ctgacaaaaa tgcttctaac agaaattctg
960
ctggatgtca cagatgaaga aatttattac gtagccaaag atgcacaccg caaagcaacg
1020
```

```
aaagctcctg caaaacagct ggcacagtcc agtgcactgg cttccctcac tggactcggt
1080
ggactgggtg gttatggatc aggagacagt gaagatgaga ggagtgacag aggatctgag
1140
tcatctgaca ctgatgatga agaattacgg catcgaatcc ggcaaaaaca ggaagctttt
1200
tggagaaaag aaaaagaaca gcagctatta catgataaac agatggaaga agaaaagcag
1260
caaacagaaa gggttacaaa agagatgaat gaatttatcc ataaagagca aaatagttta
1320
tcactactag aagcaagaga agcagacggt gatgtggtta atgaaaagaa gagaactcca
1380
aatgaaacca catcagtttt agaaccaaaa aaagagcata aagaaaaaga aaaacaagga
1440
aggagtaggt cgggaagttc tagtagtggt agttccagta gcaatagcag aactagtagt
1500
actagtagta ctgtctctag ctcttcatac agttctagct caggtagtag tcgtacttct
1560
tctcggtctt cttctcctaa aaggaaaaag agacacagta ggagtagatc tccaacaatc
1620
aaagctagac gtagcaggag tagaagctat tctcgcagaa ttaaaataga gagcaatagg
1680
gctagggtaa agattagaga tagaaggaga tctaatagaa atagcattga aagagaaaga
1740
cgacgaaatc ggagtccttc ccgagagaga cgtagaagta gaagtcgctc aagggataga
1800
cgaaccaatc gtgccagtcg cagtaggagt cgagataggc gtaaaattga tgatcaacgt
1860
ggaaatctta gtgggaacag tcataagcat aaaggtgagg ctaaagaaca agagaggaaa
1920
aaggagagga gtcgaagtat agataaagat aggaaaaaga agacaaaga aagggaacgt
1980
gaacaggata aaagaaaaga gaaacaaaaa agggaagaaa aagattttaa gttcagtagt
2040
caggatgata gattaaaaag gaaacgagaa agtgaaagaa cattttctag gagtggttct
2100
atatctgtta aaatcataag acatgattct agacaggata gtaagaaaag tactaccaaa
2160
gatagtaaaa aacattcagg ctctgattct agtggaagga gcagttctga gtctccagga
2220
agtagcaaag aaaagaaggc taagaagcct aaacatagtc gatcgcgatc cgtggagaaa
2280
tctcaaaggt ctggtaagaa ggcaagccgc aaacacaagt ctaagtcccg atcaaggtag
2340
tatacttttt aaagtatttt gtctgatttt taaaaaaaat tgactgaatt tattcaaagt
2400
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2460
agtcttaaat gttagaaatc ctatataata ttatttattt aaaattgcag attttaatt
2520
taaaatacat ttttattttt aaattttgtc ttttcccttt tttttcagat caacaacccc
2580
tccccgtcgt aaacgctgag gaatgatgtg gcaagaatgc catgatgttc tttaaaaaaa
2640
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ttccatgagt tttaagggct tgtctcatta tagaggcaca ttgtggctgt gtaggtgaaa
2700
ccagaatctt tttttttttt aatctgtaaa taggtgtact ttttccaatg ctgctccaag
2760
ttacttaata ggatttcttt gtattacgtt tttttcaaaa aatatagtgc ataataagac
2820
tataaacatg ccattctctt tcagctgtaa tgttcttaaa attattcttg aatgtactgt
2880
gatgtcaata aagctcttta gttcattttt gttaaactct tgcaccttaa ttttatggtt
2940
ttaatctaag gaacgtactt ttataaaaag gcagctggaa ttttgtataa caggtttttaa
3000
aggtaccttc tctcacctcc cccaaagaaa atggttttta cttaatagtt tgtcaaagtt
3060
tgtaaattgt acccatggac ttttgccaga ttccaacttt aagggtatga aagagggcta
3120
gaaatagacc tttacttttc atttggaagt atttgacaac tttctaaact tttcttccta
3180
ttttggggat tttcaagtaa tatattctct gtgtgtataa cgtgtggttc actcctgtaa
3240
aatgaaattg ctggaatcaa tcaagccagt gcaccagtag agttatttgt aaggaacgat
3300
tgtgtttgac agtaatagtc aagtctggaa ctatattcta cagtcaccca cttctgtttt
3360
agaagcattt tgaaacactt tttggggtta tagaaataag actcatgatt atatatattt
3420
atttatattt ttaaagtata atatgacctc aaatcaatgg aggaatgctg tattatgcag
3480
gtttgtgtca atttcatgac attaaaattg tctgattttg tccgtttctt aaaattatga
3540
ttagtgagtg gtctaacagt ttaaggcatt gataacttac aagtagagtg gggctctcaa
3600
agcattttaa ctcagttgct ttagggtcca ttttttttatg taatcactta ctcagtgata
3660
aatgaatctc tgaaaacaaa tgcttttaca ttttaattta aaaagaaaac aggtgcaggc
3720
cacagaaaag ttttaaagta tgccttctta ccagcaatag ttcattttaa aaatcatgcc
3780
agatttttgc caagatcagt gtttcctcaa catgaagata gaaatagatt tgtatagtgt
3840
gctcttgtac ctctacatag attattatat aattttgagc agttacacat ttatctaaag
3900
gaaataaatc aactgtgaat aaatgcatgt ttaccaaaat ggctgtttac agtgcattta
3960
gttctgatat ttataaagat gacatttcac agaataactt taaaatagtt tgaaattcta
4020
tatagtttag acatcgatca catctggaga caaaataaaa tgtgcaatat tttttatgta
4080
ggcgagctaa cacagtgtac ctaattgcag aattatctga ttaatttgta atagataagt
4140
tgtataacat tttcatatct taaaatgttt tttagatcaa tcttgaagtg aaatattttc
4200
aaaataaaat tctacagaaa aaaaaaaaaa aaaaaaa
4237
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```
<210> 4404
<211> 779
<212> PRT
<213> Homo sapiens

<400> 4404
Xaa Ile Gln Ala Ile Leu Ile Gly Leu His Trp Pro Lys Leu Gly Leu
1               5                   10                  15
Pro Thr Arg Glu Ala Ser Gly Gln Gln Ser Met Val Glu Gln Pro Pro
            20                  25                  30
Gly Met Met Pro Asn Gly Gln Asp Met Ser Thr Met Glu Ser Gly Pro
            35                  40                  45
Asn Asn His Gly Asn Phe Gln Gly Asp Ser Asn Phe Asn Arg Met Trp
        50 ·                 55                  60
Gln Pro Glu Trp Gly Met His Gln Gln Pro Pro His Pro Pro Pro Asp
65                  70                  75                  80
Gln Pro Trp Met Pro Pro Thr Pro Gly Pro Met Asp Ile Val Pro Pro
                85                  90                  95
Ser Glu Asp Ser Asn Ser Gln Asp Ser Gly Glu Phe Ala Pro Asp Asn
                100                 105                 110
Arg His Ile Phe Asn Gln Asn Asn His Asn Phe Gly Gly Pro Pro Asp
            115                 120                 125
Asn Phe Ala Val Gly Pro Val Asn Gln Phe Asp Tyr Gln His Gly Ala
            130                 135                 140
Ala Phe Gly Pro Pro Gln Gly Gly Phe His Pro Pro Tyr Trp Gln Pro
145                 150                 155                 160
Gly Pro Pro Gly Pro Pro Ala Pro Pro Gln Asn Arg Arg Glu Arg Pro
                165                 170                 175
Ser Ser Phe Arg Asp Arg Gln Arg Ser Pro Ile Ala Leu Pro Val Lys
                180                 185                 190
Gln Glu Pro Pro Gln Ile Asp Ala Val Lys Arg Arg Thr Leu Pro Ala
                195                 200                 205
Trp Ile Arg Glu Gly Leu Glu Lys Met Glu Arg Glu Lys Gln Lys Lys
    210                 215                 220
Leu Glu Lys Glu Arg Met Glu Gln Gln Arg Ser Gln Leu Ser Lys Lys
225                 230                 235                 240
Lys Lys Lys Ala Thr Glu Asp Ala Glu Gly Gly Asp Gly Pro Arg Leu
                245                 250                 255
Pro Gln Arg Ser Lys Phe Asp Ser Asp Glu Glu Glu Glu Asp Thr Glu
                260                 265                 270
Asn Val Glu Ala Ala Ser Ser Gly Lys Val Thr Arg Ser Pro Ser Pro
            275                 280                 285
Val Pro Gln Glu Glu His Ser Asp Pro Glu Met Thr Glu Glu Glu Lys
    290                 295                 300
Glu Tyr Gln Met Met Leu Leu Thr Lys Met Leu Leu Thr Glu Ile Leu
305                 310                 315                 320
Leu Asp Val Thr Asp Glu Glu Ile Tyr Tyr Val Ala Lys Asp Ala His
                325                 330                 335
Arg Lys Ala Thr Lys Ala Pro Ala Lys Gln Leu Ala Gln Ser Ser Ala
                340                 345                 350
Leu Ala Ser Leu Thr Gly Leu Gly Gly Leu Gly Gly Tyr Gly Ser Gly
                355                 360                 365
Asp Ser Glu Asp Glu Arg Ser Asp Arg Gly Ser Glu Ser Ser Asp Thr
```

```
            370                    375                    380
Asp Asp Glu Glu Leu Arg His Arg Ile Arg Gln Lys Gln Glu Ala Phe
385                 390                    395                    400
Trp Arg Lys Glu Lys Glu Gln Gln Leu Leu His Asp Lys Gln Met Glu
                405                    410                    415
Glu Glu Lys Gln Gln Thr Glu Arg Val Thr Lys Glu Met Asn Glu Phe
                420                    425                    430
Ile His Lys Glu Gln Asn Ser Leu Ser Leu Leu Glu Ala Arg Glu Ala
            435                    440                    445
Asp Gly Asp Val Val Asn Glu Lys Lys Arg Thr Pro Asn Glu Thr Thr
            450                    455                    460
Ser Val Leu Glu Pro Lys Lys Glu His Lys Glu Lys Glu Lys Gln Gly
465                     470                    475                    480
Arg Ser Arg Ser Gly Ser Ser Ser Gly Ser Ser Ser Ser Asn Ser
                485                    490                    495
Arg Thr Ser Ser Thr Ser Ser Thr Val Ser Ser Ser Ser Tyr Ser Ser
            500                    505                    510
Ser Ser Gly Ser Ser Arg Thr Ser Ser Arg Ser Ser Ser Pro Lys Arg
            515                    520                    525
Lys Lys Arg His Ser Arg Ser Arg Ser Pro Thr Ile Lys Ala Arg Arg
            530                    535                    540
Ser Arg Ser Arg Ser Tyr Ser Arg Arg Ile Lys Ile Glu Ser Asn Arg
545                     550                    555                    560
Ala Arg Val Lys Ile Arg Asp Arg Arg Arg Ser Asn Arg Asn Ser Ile
                565                    570                    575
Glu Arg Glu Arg Arg Arg Asn Arg Ser Pro Ser Arg Glu Arg Arg Arg
                580                    585                    590
Ser Arg Ser Arg Ser Arg Asp Arg Arg Thr Asn Arg Ala Ser Arg Ser
            595                    600                    605
Arg Ser Arg Asp Arg Arg Lys Ile Asp Asp Gln Arg Gly Asn Leu Ser
            610                    615                    620
Gly Asn Ser His Lys His Lys Gly Glu Ala Lys Glu Gln Glu Arg Lys
625                     630                    635                    640
Lys Glu Arg Ser Arg Ser Ile Asp Lys Asp Arg Lys Lys Lys Asp Lys
                645                    650                    655
Glu Arg Glu Arg Glu Gln Asp Lys Arg Lys Glu Lys Gln Lys Arg Glu
                660                    665                    670
Glu Lys Asp Phe Lys Phe Ser Ser Gln Asp Asp Arg Leu Lys Arg Lys
            675                    680                    685
Arg Glu Ser Glu Arg Thr Phe Ser Arg Ser Gly Ser Ile Ser Val Lys
            690                    695                    700
Ile Ile Arg His Asp Ser Arg Gln Asp Ser Lys Lys Ser Thr Thr Lys
705                     710                    715                    720
Asp Ser Lys Lys His Ser Gly Ser Asp Ser Ser Gly Arg Ser Ser Ser
                725                    730                    735
Glu Ser Pro Gly Ser Ser Lys Glu Lys Lys Ala Lys Lys Pro Lys His
                740                    745                    750
Ser Arg Ser Arg Ser Val Glu Lys Ser Gln Arg Ser Gly Lys Lys Ala
            755                    760                    765
Ser Arg Lys His Lys Ser Lys Ser Arg Ser Arg
            770                    775
```

```
<210> 4405
<211> 918
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```
<212> DNA
<213> Homo sapiens

<400> 4405
ngcttcctta cagcacccc acctgccaga gctgatcctc cctaggccct gcctaacctt
60
gagttggccc ccaatccctc tggctgcaga agtccccta cccccaatga gaggaggggc
120
aggaccagat cttttgagag ctgagggttg agggcattga gccaacacac agatttgtcg
180
cctctgtccc cgaagacacc tgcaccctcc atgcggagcc aagatgggga atggaactga
240
ggaagattat aactttgtct tcaagggtac tatcgtggtg cagtgggggc cctcctggtg
300
tttgacctaa ccaagcacca gacctatgct gtggtggagc gatggctgaa ggagctctat
360
gaccatgctg aagccacgat cgtcgtcatg ctcgtgggta acaaaagtga cctcagccag
420
gcccgggaag tgcccactga ggaggcccga atgttcgctg aaaacaatgg actgctcttc
480
ctggagacct cagccctgga ctctaccaat gttgagctag cctttgagac tgtcctgaaa
540
gaaatctttg cgaaggtgtc caagcagaga cagaacagca tccggaccaa tgccatcact
600
ctggcagtg cccaggctgg acaggagcct ggccctgggg agaagagggc ctgttgcatc
660
agcctctgac cttggccagc accacctgcc cccactggct ttttggtgcc ccttgtcccc
720
acttcagccc caggaccttt ccttgccctt tggttccaga tatcagactg ttccctgttc
780
acagcaccct cagggtctta aggtcttcat gccctatcac aaatacctct tttatctgtc
840
caccctcac agactaggac cctcaaataa agctgtttta tatcaaaaaa aaaaaaaaaa
900
aaaaaaaaaa aaaaaaaa
918

<210> 4406
<211> 138
<212> PRT
<213> Homo sapiens

<400> 4406
Leu Cys Leu Gln Gly Tyr Tyr Arg Gly Ala Val Gly Ala Leu Leu Val
1                   5                   10                  15
Phe Asp Leu Thr Lys His Gln Thr Tyr Ala Val Val Glu Arg Trp Leu
                20                  25                  30
Lys Glu Leu Tyr Asp His Ala Glu Ala Thr Ile Val Val Met Leu Val
            35                  40                  45
Gly Asn Lys Ser Asp Leu Ser Gln Ala Arg Glu Val Pro Thr Glu Glu
        50                  55                  60
Ala Arg Met Phe Ala Glu Asn Asn Gly Leu Leu Phe Leu Glu Thr Ser
65                  70                  75                  80
Ala Leu Asp Ser Thr Asn Val Glu Leu Ala Phe Glu Thr Val Leu Lys
```

3596

```
                    85                  90                  95
Glu Ile Phe Ala Lys Val Ser Lys Gln Arg Gln Asn Ser Ile Arg Thr
                100                 105                 110
Asn Ala Ile Thr Leu Gly Ser Ala Gln Ala Gly Gln Glu Pro Gly Pro
            115                 120                 125
Gly Glu Lys Arg Ala Cys Cys Ile Ser Leu
        130                 135
```

```
<210> 4407
<211> 974
<212> DNA
<213> Homo sapiens
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<400> 4407
ctgtggctaa tgaatgtttt accaaaactc taaactcttt taaacttccc agtttctcaa
60
agtcagtgtg taaattattt tattctagtt tgcacggaga caattttaaa agactgtttt
120
ttctctgtag tccttgagca gccatttgac caaataaatt taattttata atcaataaaa
180
gtcaaaagaa taccttttga agatagggga tcacccattt atacctctaa atgttaacct
240
caatgcacat tttggaggat atttgcaaga tttattattc atttgatgtt ttcttaaagg
300
atgtttgatg taggtggaca gagatctgag agaaagaagt ggattcactg ctttgaagga
360
gttacatgca ttatattttg tgctgcactt agtgcctatg acatggtcct cgtggaagac
420
gaagaagtga atagaatgca tgaaagcctt cacctgttca acagtatctg taatcacaag
480
tattttttcaa caacctccat tgtcctgttc ctcaacaaaa aagatatctt tcaagaaaag
540
gtaaccaagg tgcatcttag tatctgcttt ccagaataca ctgggccaaa tacatttgaa
600
gatgcaggaa actacatcaa gaaccagttt ctagacctga atttaaaaaa agaagataag
660
gaaatttatt cccacatgac ctgtgctact gacacccaaa atgtcaagtt tgtgtttgac
720
gcagttacag atataataat caaagagaat ctaaaagact gtgggctttt ctaatcaact
780
attttctctt ccactcttgc tcatgtatgc ttttcaaaat ataaaagaaa aggtgctgta
840
tgacgtgttt agtttgaata gacattaact tatctagaca tataactagc attgtaaagc
900
aaaaagtttt cccacaaaaa tatttatgtg ttatcatcta tatctggata agtttaaatt
960
tctttggaac atgg
974
```

```
<210> 4408
<211> 158
<212> PRT
<213> Homo sapiens
```

<400> 4408
```
Arg Met Phe Asp Val Gly Gly Gln Arg Ser Glu Arg Lys Lys Trp Ile
 1           5                  10                  15
His Cys Phe Glu Gly Val Thr Cys Ile Ile Phe Cys Ala Ala Leu Ser
            20                  25                  30
Ala Tyr Asp Met Val Leu Val Glu Asp Glu Glu Val Asn Arg Met His
        35                  40                  45
Glu Ser Leu His Leu Phe Asn Ser Ile Cys Asn His Lys Tyr Phe Ser
    50                  55                  60
Thr Thr Ser Ile Val Leu Phe Leu Asn Lys Lys Asp Ile Phe Gln Glu
65                  70                  75                  80
Lys Val Thr Lys Val His Leu Ser Ile Cys Phe Pro Glu Tyr Thr Gly
                85                  90                  95
Pro Asn Thr Phe Glu Asp Ala Gly Asn Tyr Ile Lys Asn Gln Phe Leu
            100                 105                 110
Asp Leu Asn Leu Lys Lys Glu Asp Lys Glu Ile Tyr Ser His Met Thr
        115                 120                 125
Cys Ala Thr Asp Thr Gln Asn Val Lys Phe Val Phe Asp Ala Val Thr
    130                 135                 140
Asp Ile Ile Ile Lys Glu Asn Leu Lys Asp Cys Gly Leu Phe
145                 150                 155
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<210> 4409
<211> 4217
<212> DNA
<213> Homo sapiens

<400> 4409
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120
gagaacgccc ggcgccgggg tacccctgaa cctgaagaag ctgggcggcg gggtgggaag
180
aggccaaagc caccccctgg agtggcctct gcatcggccc gagggccgcc agccactgat
240
gggctggggg ccaaggtgaa gctggaggag aagcagcacc atccatgcca gaagtgccca
300
cgagttttca caaccgctg gtacctggag aaacacatga atgtgaccca gccgcatg
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420
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480
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gaaaggtttc agtacaagta ccagctacgc tcccacatga gcattcatat tgggcacaaa
780
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cagttcatgt gccagtggtg tggcaaggat ttcaacatga agcagtactt cgacgaacac
840

atgaaaacac acactggaga gaaacccttt atctgtgaaa tctgtggcaa aagcttcacc
900

agccgcccca acatgaagag acaccgcaga actcacacag gcgagaagcc ctatccatgt
960

gatgtgtgtg gccagcggtt ccgcttctcg aacatgctca aggcccacaa ggagaagtgc
1020

ttccgcgtca gccacaccct ggccggcgac ggcgtccccg ctgccccagg cctgccccca
1080

acccagcccc aggcgcacgc actgcccctg ctcccggggc tgccccagac cctgccgccc
1140

ccgccccacc tgccgccccc gcctccgctc ttccccacca ctgccagccc cggcgggagg
1200

atgaacgcca caactagct gccgagctgc acccgtgcac ccgctggggc ctggagtcag
1260

ggcccactcc aggagggacc cactgccttc ccggggagca cagtagtgcg ggcctgggcc
1320

ctgctccacc tccagaagtg gctggatgta ccctgcctga ggccccgacg aggaggggta
1380

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1440

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1500

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1560

gcctgggcag caggtgtggc cagtccctct gccaaggcct gtgccagagg ggttggccag
1620

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1680

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1740

gtagacccag tctgagagcc gcaagcactg aggcagggcc tgagactgga cctgggtgag
1800

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1860

tggggcaggc aggggctgga ccccagggac ttgccttccc cacccactct gctgccagca
1920

ggcccaggga tccctgacct gcaccaggtg gcaccaaggg tcctgagtcc tggagatgtc
1980

cccagaagct gctgtgcctc acagcgctgt gagccagacc ctccttgggc agacaggctg
2040

actggcagca ccagctttgg gggcagagtc ctaggatgag gcttgggcag tgctggtagg
2100

gtttcaaggt gctattagtg gggcaggggc agggcggctg ctcacagagc accccagttc
2160

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2220

ctctgctccc ccaaaggccc gctctaggcc ttatcctccc tctaggtcct gccacaacct
2280

gtccctggct ggctccagcg tcctcgtccc tcctgggcct gtgcaccggt gggtggggcg
2340

cccatagcac tgccggtaaa ggagcctgca tgttcaggcc cctcgggga ttggggggac
2400

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tggggaggcg cagcctagac ccaattgctt gcccccatga ggctagcact aataggaaac
2460
ccttttttgt tgtcatttaa tgtctttatt cctgccttta atatggggag gaaggttcca
2520
taagctacat gtttcctagt taagctcttt cctattgtgt ttatacagtt ttgtttgtta
2580
tactctttgc accttaaacc cccaccactc cccgacacta ttgccttccc agcatggctg
2640
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2700
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2760
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2820
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2880
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2940
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3060
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3180
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3240
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tggccgtggc caggctgaga cctgtcaggc catactgaca agcagaggtc agagacactg
3360
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3480
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3540
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3600
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3660
cagtatggat aggggttcct gttttactag cttttacatc tttttatttta aaacaaaaca
3720
acacaaaaaa acaatgtgcc cccagatgtc agaatgaggc gactagggca ccatactcac
3780
tttccagggc tgggggaagg gggacgcagg atcatcccct cccaaggaga tctgtggggg
3840
tcccaccgtc catctggact tctcagcctg tttggctaga actcaggcct ggagtctggg
3900
tctgcccct ccccggctcc ttggggctct ctggtctcag gccagctggc gatgggtggc
3960
tagagtgatg aactcaagcc ctgtggccac agttctggga gccttcaacc ctggctcatg
4020
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ctgccatagt ctccacggtg cccttcacag agggcttggt agtggcagaa tggccatgcc
4080
caggtgtgtg ttgagaccat tgacaactgc tcgtgtacag gcaccccaca gccccagagc
4140
atggggcaca gcaggcatgc gagtgagagg atgaagggga ataaagtcag tacaactcgt
4200
aaaaaaaaaa aaaaaaa
4217

<210> 4410
<211> 405
<212> PRT
<213> Homo sapiens

<400> 4410
Glu Ser Ser Glu Glu Glu Glu Gly Glu Glu Gly Glu Ala Gly Gly Lys
1   5   10   15
Gln Gly Pro Arg Gly Ser Arg Ser Ser Arg Ala Asp Pro Pro Pro His
            20   25   30
Ser His Met Ala Thr Arg Ser Arg Glu Asn Ala Arg Arg Arg Gly Thr
        35   40   45
Pro Glu Pro Glu Glu Ala Gly Arg Arg Gly Gly Lys Arg Pro Lys Pro
    50   55   60
Pro Pro Gly Val Ala Ser Ala Ser Ala Arg Gly Pro Pro Ala Thr Asp
65   70   75   80
Gly Leu Gly Ala Lys Val Lys Leu Glu Glu Lys Gln His His Pro Cys
                85   90   95
Gln Lys Cys Pro Arg Val Phe Asn Asn Arg Trp Tyr Leu Glu Lys His
            100   105   110
Met Asn Val Thr His Ser Arg Met Gln Ile Cys Asp Gln Cys Gly Lys
        115   120   125
Arg Phe Leu Leu Glu Ser Glu Leu Leu Leu His Arg Gln Thr Asp Cys
    130   135   140
Glu Arg Asn Ile Gln Cys Val Thr Cys Gly Lys Ala Phe Lys Lys Leu
145   150   155   160
Trp Ser Leu His Glu His Asn Lys Ile Val His Gly Tyr Ala Glu Lys
                165   170   175
Lys Phe Ser Cys Glu Ile Cys Glu Lys Lys Phe Tyr Thr Met Ala His
                180   185   190
Val Arg Lys His Met Val Ala His Thr Lys Asp Met Pro Phe Thr Cys
            195   200   205
Glu Thr Cys Gly Lys Ser Phe Lys Arg Ser Met Ser Leu Lys Val His
    210   215   220
Ser Leu Gln His Ser Gly Glu Lys Pro Phe Arg Cys Glu Asn Cys Asp
225   230   235   240
Glu Arg Phe Gln Tyr Lys Tyr Gln Leu Arg Ser His Met Ser Ile His
                245   250   255
Ile Gly His Lys Gln Phe Met Cys Gln Trp Cys Gly Lys Asp Phe Asn
            260   265   270
Met Lys Gln Tyr Phe Asp Glu His Met Lys Thr His Thr Gly Glu Lys
            275   280   285
Pro Phe Ile Cys Glu Ile Cys Gly Lys Ser Phe Thr Ser Arg Pro Asn
        290   295   300
Met Lys Arg His Arg Arg Thr His Thr Gly Glu Lys Pro Tyr Pro Cys

```
305                     310                     315                     320
Asp Val Cys Gly Gln Arg Phe Arg Phe Ser Asn Met Leu Lys Ala His
                    325                     330                     335
Lys Glu Lys Cys Phe Arg Val Ser His Thr Leu Ala Gly Asp Gly Val
                340                     345                     350
Pro Ala Ala Pro Gly Leu Pro Pro Thr Gln Pro Gln Ala His Ala Leu
            355                     360                     365
Pro Leu Leu Pro Gly Leu Pro Gln Thr Leu Pro Pro Pro Pro His Leu
        370                     375                     380
Pro Pro Pro Pro Pro Leu Phe Pro Thr Thr Ala Ser Pro Gly Gly Arg
385                     390                     395                     400
Met Asn Ala Asn Asn
                405
```

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<210> 4411
<211> 484
<212> DNA
<213> Homo sapiens
```

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<400> 4411
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gtgtggagtg aatggggctg aaagggtagg gctggcccac agagggtggg gaggctgcag
120
caaaagagga gtttagggtg gctatggtgc aggggcagct gtatgcttca cctcaaatgt
180
tactgtcttc tctctccatc aaggaggaag ggcccaggct ggggttagga gggctagggg
240
cccaggctgt gtgtcccctt ttttcctcct ggtgccctgc cccccacgc tgtcatctcc
300
ctcagtggca gtggggttc atcactgggt cttcaggtcc cttgcccatg gctggtggtg
360
ttccaggtgg gcccaaccag gcggcccctg cctctaggca gcgcgtaggt ttccttgggc
420
agcctcaatc ctgccagcgc cagcatgtct ccctgcacag aagccatcaa gcacctttgg
480
atcc
484
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<210> 4412
<211> 113
<212> PRT
<213> Homo sapiens
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```
<400> 4412
Met Val Gln Gly Gln Leu Tyr Ala Ser Pro Gln Met Leu Leu Ser Ser
1               5                   10                  15
Leu Ser Ile Lys Glu Glu Gly Pro Arg Leu Gly Leu Gly Gly Leu Gly
            20                  25                  30
Ala Gln Ala Val Cys Pro Leu Phe Ser Ser Trp Cys Pro Ala Pro Pro
        35                  40                  45
Arg Cys His Leu Pro Gln Trp Gln Trp Gly Phe Ile Thr Gly Ser Ser
    50                  55                  60
Gly Pro Leu Pro Met Ala Gly Gly Val Pro Gly Gly Pro Asn Gln Ala
```

```
65                      70                 75                 80
Ala Pro Ala Ser Arg Gln Arg Val Gly Phe Leu Gly Gln Pro Gln Ser
                     85                 90                 95
Cys Gln Arg Gln His Val Ser Leu His Arg Ser His Gln Ala Pro Leu
             100                105                110
Asp
```

<210> 4413
<211> 1097
<212> DNA
<213> Homo sapiens

<400> 4413
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atggcgctgc tttttgcacg ttctttgcgc ttgtgccgct ggggagccaa acgattggga
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gttgcctcca cagagcgcca gagaggcgtc agtttcaaac tggaagaaaa aaccgcccac
120
agcagcctgg cactcttcag agatgatacg ggtgtcaaat atggcttggt gggattggag
180
cccaccaagg tgccttgaat gtggagcgct tccgggagtt ggcaggtgct ggcagacaca
240
gcggtcacca gtggcagaca ctactgggaa gtgacagtga agcgctccca gcagttccgg
300
ataggagtgg cagatgtgga catgtcccgg gatagctgca ttggtgttga tgatcgttcc
360
tgggtgttca cctatgccca gcgcaagtgg tacaccatgt tggccaacga gaaagcccca
420
gttgagggta ttgggcagcc agagaaggtg gggctgttgc tggagtatga ggcccagaag
480
ctgagcctgg tggatgtgag ccaggtctct gtggttcaca cgctacagac agatttccgg
540
ggtccagtgg tgcctgcctt tgctctctgg gatggggagc tgctgaccca ttcagggctt
600
gaggtgcccg agggcctcta gtatgtccat tactggagtc cctaatcacg cctttggcca
660
gcctcctttt gaaagtgtcc gaagcctttt tactttgcct caagcaacct ctagctccca
720
caattcagtg ttgggtcctc tgtgcaatat catgatcatc ttcctcatcc cctaccttgt
780
gaaagctagg catacagcca aaccctcctt ttccccaccc accaactact gccaatttcc
840
taggctacca tgggtgtatc ttccttgacc tgcttccttc agtccctctg cctccctttg
900
cccaggcctt tctcagactg tattccatcc tggggtctta tcattcagct ttgtttgaat
960
ttattaatca ccatgatacc tctccctccc tttgtccaca tgtaacttgt tcttggggct
1020
ctaccagatg gctgaagagt aaatcctttc tacctctggc tgaaaaaaaa aaaaaaaaaa
1080
aaaaaaaaaa aaaaaaa
1097
```

<210> 4414

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<211> 65
<212> PRT
<213> Homo sapiens

<400> 4414
Met Ala Leu Leu Phe Ala Arg Ser Leu Arg Leu Cys Arg Trp Gly Ala
1               5                   10                  15
Lys Arg Leu Gly Val Ala Ser Thr Glu Arg Gln Arg Gly Val Ser Phe
            20                  25                  30
Lys Leu Glu Glu Lys Thr Ala His Ser Ser Leu Ala Leu Phe Arg Asp
        35                  40                  45
Asp Thr Gly Val Lys Tyr Gly Leu Val Gly Leu Glu Pro Thr Lys Val
        50                  55                  60
Pro
65


<210> 4415
<211> 775
<212> DNA
<213> Homo sapiens

<400> 4415
taaaaggaaa acagtgtctt tattgtgtgt agttctaaca aacgttcact gtgtgcgcat
60
tccagcagaa agagacaaag atctttgttc aaaatattct gaaaaaggta aactaactgc
120
attattgaat acacaaaagg aatgttaccg ttacttgttc atagtcaaag gtgaagttaa
180
aaaaaaaggg aagttaaata actgaagtaa tggtttgccc aaatagcaaa cgtaggatac
240
aggcgtgggc aaagagcagc tactgaagct catgaggagg atgctggata tagggtaggt
300
aacttgacaa atgcctctgc ttctttggaa ccttcttcct agatcacccc cacaaattcc
360
aaacctggct ctttcagagc acaacagcca aatgtaacta aactcctcat tacttctgtg
420
atatttggca acagaatgag atagtttaaa aaaaaatcaa tttcttgttg agacaagaca
480
tgtctgaatc catttctctt ggggtaggag gaggtaatga acattaacgt tctgcatctc
540
aatctcctaa aatggaattt aaccagatag atatcgcttg agattttaaa gcaggagata
600
ccataagtaa tgatactcca ggcctgtaaa gcattttttca ttgtcccaca ttgcagctaa
660
atgagtataa actcgacagt gttctgattt cacaacatat gcatttatga caactgctaa
720
aacaacttta caggctcaaa cgataggttc caagggattt ttgttttttgc ttaag
775


<210> 4416
<211> 100
<212> PRT
<213> Homo sapiens
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<400> 4416
Met Lys Asn Ala Leu Gln Ala Trp Ser Ile Ile Thr Tyr Gly Ile Ser
1   5   10   15
Cys Phe Lys Ile Ser Ser Asp Ile Tyr Leu Val Lys Phe His Phe Arg
            20   25   30
Arg Leu Arg Cys Arg Thr Leu Met Phe Ile Thr Ser Ser Tyr Pro Lys
        35   40   45
Arg Asn Gly Phe Arg His Val Leu Ser Gln Gln Glu Ile Asp Phe Phe
        50   55   60
Leu Asn Tyr Leu Ile Leu Leu Pro Asn Ile Thr Glu Val Met Arg Ser
65   70   75   80
Leu Val Thr Phe Gly Cys Cys Ala Leu Lys Glu Pro Gly Leu Glu Phe
                85   90   95
Val Gly Val Ile
            100

<210> 4417
<211> 980
<212> DNA
<213> Homo sapiens

<400> 4417
nnacgcgtga gggaaaagca gaggcagttg gaggtagcgc aagttgaaaa ccagctgcta
60
aaaatgaagg tggaatcgtc-ccaagaagcc aatgctgagg tgatgcgaga gatgaccaag
120
aagctgtaca gccagtatga ggagaagctg caggaagaac agaggaagca cagtgctgag
180
aaggaggctc ttttggaaga aaccaatagt tttctgaaag cgattgaaga agccaataaa
240
aagatgcaag cagcagagat cagcctagag gagaaagacc agaggatcgg ggagctggac
300
aggctgattg agcgcatgga aaaggaacgt catcaactgc aacttcaact cctagaacat
360
gaaacagaaa tgtctgggga gttaactgat tctgacaagg aaaggtatca gcagttggag
420
gaggcatcag ccagcctccg tgagcggatc agacacctag atgacatggt gcattgccag
480
cagaagaaag tcaagcagat ggttgaggag attgagtcat taaagaaaaa agtgcaacag
540
aagcagctcc tgatactgca gctttttagaa aaaatctctt tcctggaagg agagaataat
600
gaactacaaa gcaggttgga ctatttgaca gaaacccagg ccaagactga agtggaaaca
660
agagaaattg gagtgggctg tgatcttctt cccagcccaa caggcaggac tcgtgaaatt
720
gtgatgcctt ctaggaacta cacccccatac acaagagtcc tggagttatc ctcaaagaaa
780
acgctgactt aggcactcag aggcatacac tttttacaga tggacaaaag ctctggaacc
840
ctgtggcttc aaatcctttg ggaagggtga ctgttgtttc ccctacacac agtgtaagcc
900
ggaatgggaa tcgctgaggc tctgatccac ttctaagaca ggaaggaaag tgaaggcaga
960

3605

gtgagcaggt aagagaggga
980

<210> 4418
<211> 263
<212> PRT
<213> Homo sapiens

<400> 4418
Xaa Arg Val Arg Glu Lys Gln Arg Gln Leu Glu Val Ala Gln Val Glu
 1   5   10   15
Asn Gln Leu Leu Lys Met Lys Val Glu Ser Ser Gln Glu Ala Asn Ala
                20   25   30
Glu Val Met Arg Glu Met Thr Lys Lys Leu Tyr Ser Gln Tyr Glu Glu
        35   40   45
Lys Leu Gln Glu Glu Gln Arg Lys His Ser Ala Glu Lys Glu Ala Leu
    50   55   60
Leu Glu Glu Thr Asn Ser Phe Leu Lys Ala Ile Glu Glu Ala Asn Lys
65   70   75   80
Lys Met Gln Ala Ala Glu Ile Ser Leu Glu Glu Lys Asp Gln Arg Ile
                85   90   95
Gly Glu Leu Asp Arg Leu Ile Glu Arg Met Glu Lys Glu Arg His Gln
            100   105   110
Leu Gln Leu Gln Leu Leu Glu His Glu Thr Glu Met Ser Gly Glu Leu
            115   120   125
Thr Asp Ser Asp Lys Glu Arg Tyr Gln Gln Leu Glu Glu Ala Ser Ala
    130   135   140
Ser Leu Arg Glu Arg Ile Arg His Leu Asp Asp Met Val His Cys Gln
145   150   155   160
Gln Lys Lys Val Lys Gln Met Val Glu Glu Ile Glu Ser Leu Lys Lys
                165   170   175
Lys Val Gln Gln Lys Gln Leu Leu Ile Leu Gln Leu Leu Glu Lys Ile
            180   185   190
Ser Phe Leu Glu Gly Glu Asn Asn Glu Leu Gln Ser Arg Leu Asp Tyr
            195   200   205
Leu Thr Glu Thr Gln Ala Lys Thr Glu Val Glu Thr Arg Glu Ile Gly
    210   215   220
Val Gly Cys Asp Leu Leu Pro Ser Pro Thr Gly Arg Thr Arg Glu Ile
225   230   235   240
Val Met Pro Ser Arg Asn Tyr Thr Pro Tyr Thr Arg Val Leu Glu Leu
                245   250   255
Ser Ser Lys Lys Thr Leu Thr
                260

<210> 4419
<211> 369
<212> DNA
<213> Homo sapiens

<400> 4419
ngaattcctt gtatcgaaag tgccagaata catactattt attatgtatt tattctaaga
60
cagggtcttg ctctgntcac ccaggctgga gtgcagtggt gcgatcttgg ctcactgcaa
120

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cctccgcctc cccagctcaa gcaactctcc tgccccagcc acccaagtnn aaattacagg
180
cccgtgccac cacacccggc caatttctgt atttttagta gagacggggt ttcaccatat
240
tggccaggac ggtctcaaac tcctggcccc atgtgatcct cccaccttgg cctcccaagg
300
tgctggtatt acaggcgtga gccaccactg cgcctggcca gattttgctc ttttttgagc
360
agtctcagn
369
```

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<210> 4420
<211> 91
<212> PRT
<213> Homo sapiens
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<400> 4420
Xaa Ile Pro Cys Ile Glu Ser Ala Arg Ile His Thr Ile Tyr Tyr Val
1               5                   10                  15
Phe Ile Leu Arg Gln Gly Leu Ala Leu Xaa Thr Gln Ala Gly Val Gln
          20                  25                  30
Trp Cys Asp Leu Gly Ser Leu Gln Pro Pro Pro Pro Gln Leu Lys Gln
        35                  40                  45
Leu Ser Cys Pro Ser His Pro Ser Xaa Asn Tyr Arg Pro Val Pro Pro
      50                  55                  60
His Pro Ala Asn Phe Cys Ile Phe Ser Arg Asp Gly Val Ser Pro Tyr
65                  70                  75                  80
Trp Pro Gly Arg Ser Gln Thr Pro Gly Pro Met
                  85                  90
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<210> 4421
<211> 1356
<212> DNA
<213> Homo sapiens
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<400> 4421
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tgtggacacc aaatcccgca ggggttgctg tagctatgcc cgtgggcatc cttgccctgg
120
ctggggtgtg ctagagagag gaaagctgga ggaggagagc tgagctggtg gttaccccat
180
gccaggaggg ccaaggcaag aagcctgcag ccccagagat actgaccctg tcccctgccc
240
tccagggcac aactgaacta acggaatggc ttaatcagat agctcgagaa ctgccactac
300
cactccctcc ctgcccactc ctcccaaagt ccacctgttc ccgcaagagt cccacctcac
360
aagcaaccac cagaggctga tacaaatggc cgctgtattt ttgctaaagt gacagtgaca
420
cagataaggc aaagagctga ggggcaggac acatcagatg ggaaggggga gaccgtgcaa
480
aatggcagtc taacagaaaa tcatccttgt accaacagcc ccttccctcc caagttaggt
540
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gagcccttgg gccagtgtat gggcagaaaa gcagatttgt gtccttcaga agggaaatgt
600
aaaaaggtga aagctctagt tgaagggcag tgagaggggc tggagtggga gagaaggtct
660
ctcctggccg gtggtctggg tgcagcaagg gcactctgag aaggcagaat ggaaacgcag
720
ggctggaggg gcatgggtac aggtttgggg gctctttcca gcctctacta tgttgccccc
780
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<210> 4422
<211> 58
<212> PRT
<213> Homo sapiens


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Thr Trp Gln Asn Pro Val Ser Thr Lys Asn Thr Lys Ile Cys Arg Ala
        35                  40                  45
Trp Trp Gln Met Pro Val Ile Pro Ala Thr
    50                  55


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<211> 2673
<212> DNA
<213> Homo sapiens


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120
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2673

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<211> 768
<212> PRT
<213> Homo sapiens

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            20   25   30
Ser Gly Asp Glu Glu Glu Glu Gly Pro Ile Val Leu Gly Arg Arg Gln
        35   40   45
Lys Ala Leu Gly Lys Asn Arg Ser Ala Asp Phe Asn Pro Asp Phe Val
    50   55   60
Phe Thr Glu Lys Glu Gly Thr Tyr Asp Gly Ser Trp Ala Leu Ala Asp
65   70   75   80
Val Met Ser Gln Leu Lys Lys Lys Arg Ala Ala Thr Thr Leu Asp Glu
                85   90   95
Lys Ile Glu Lys Val Arg Lys Lys Arg Lys Thr Glu Asp Lys Glu Ala
                100   105   110
Lys Ser Gly Lys Leu Glu Lys Glu Lys Glu Ala Lys Glu Gly Ser Glu

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            115                 120                 125
Pro Arg Glu Gln Glu Asp Leu Gln Glu Asn Asp Glu Glu Gly Ser Glu
    130                 135                 140
Asp Glu Ala Ser Glu Thr Asp Tyr Ser Ser Ala Asp Glu Asn Ile Leu
145                 150                 155                 160
Thr Lys Ala Asp Thr Leu Lys Val Lys Asp Arg Lys Lys Lys Lys Lys
                165                 170                 175
Lys Gly Gln Glu Ala Gly Gly Phe Phe Glu Asp Ala Ser Gln Tyr Asp
                180                 185                 190
Glu Asn Leu Ser Phe Gln Asp Met Asn Leu Ser Arg Pro Leu Leu Lys
        195                 200                 205
Ala Ile Thr Ala Met Gly Phe Lys Gln Pro Thr Pro Ile Gln Lys Ala
    210                 215                 220
Cys Ile Pro Val Gly Leu Leu Gly Lys Asp Ile Cys Ala Cys Ala Ala
225                 230                 235                 240
Thr Gly Thr Gly Lys Thr Ala Ala Phe Ala Leu Pro Val Leu Glu Arg
                245                 250                 255
Leu Ile Tyr Lys Pro Arg Gln Ala Pro Val Thr Arg Val Leu Val Leu
                260                 265                 270
Val Pro Thr Arg Glu Leu Gly Ile Gln Val His Ser Val Thr Arg Gln
            275                 280                 285
Leu Ala Gln Phe Cys Asn Ile Thr Thr Cys Leu Ala Val Gly Gly Leu
        290                 295                 300
Asp Val Lys Ser Gln Glu Ala Ala Leu Arg Ala Ala Pro Asp Ile Leu
305                 310                 315                 320
Ile Ala Thr Pro Gly Arg Leu Ile Asp His Leu His Asn Cys Pro Ser
                325                 330                 335
Phe His Leu Ser Ser Ile Glu Val Leu Ile Leu Asp Glu Ala Asp Arg
                340                 345                 350
Met Leu Asp Glu Tyr Phe Glu Glu Gln Met Lys Glu Ile Ile Arg Met
        355                 360                 365
Cys Ser His His Arg Gln Thr Met Leu Phe Ser Ala Thr Met Thr Asp
    370                 375                 380
Glu Val Lys Asp Leu Ala Ser Val Ser Leu Lys Asn Pro Val Arg Ile
385                 390                 395                 400
Phe Val Asn Ser Asn Thr Asp Val Ala Pro Phe Leu Arg Gln Glu Phe
                405                 410                 415
Ile Arg Ile Arg Pro Asn Arg Glu Gly Asp Arg Glu Ala Ile Val Ala
                420                 425                 430
Ala Leu Leu Thr Arg Thr Phe Thr Asp His Val Met Leu Phe Thr Gln
        435                 440                 445
Thr Lys Lys Gln Ala His Arg Met His Ile Leu Leu Gly Leu Met Gly
    450                 455                 460
Leu Gln Val Gly Glu Leu His Gly Asn Leu Ser Gln Thr Gln Arg Leu
465                 470                 475                 480
Glu Ala Leu Arg Arg Phe Lys Asp Glu Gln Ile Asp Ile Leu Val Ala
            485                 490                 495
Thr Asp Val Ala Ala Arg Gly Leu Asp Ile Glu Gly Val Lys Thr Val
                500                 505                 510
Ile Asn Phe Thr Met Pro Asn Thr Ile Lys His Tyr Val His Arg Val
                515                 520                 525
Gly Arg Thr Ala Arg Ala Gly Arg Ala Gly Arg Ser Val Ser Leu Val
        530                 535                 540
Gly Glu Asp Glu Arg Lys Met Leu Lys Glu Ile Val Lys Ala Ala Lys
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Ala Pro Val Lys Ala Arg Ile Leu Pro Gln Asp Val Ile Leu Lys Phe
                565                 570                 575
Arg Asp Lys Ile Glu Lys Met Glu Lys Asp Val Tyr Ala Val Leu Gln
                580                 585                 590
Leu Glu Ala Glu Glu Lys Glu Met Gln Gln Ser Glu Ala Gln Ile Asn
            595                 600                 605
Thr Ala Lys Arg Leu Leu Glu Lys Gly Lys Glu Ala Val Val Gln Glu
        610                 615                 620
Pro Glu Arg Ser Trp Phe Gln Thr Lys Glu Glu Arg Lys Lys Glu Lys
625                 630                 635                 640
Ile Ala Lys Ala Leu Gln Glu Phe Asp Leu Ala Leu Arg Gly Lys Lys
                645                 650                 655
Lys Arg Lys Lys Phe Met Lys Asp Ala Lys Lys Lys Gly Glu Met Thr
                660                 665                 670
Ala Glu Glu Arg Ser Gln Phe Glu Ile Leu Lys Ala Gln Met Phe Ala
            675                 680                 685
Glu Arg Leu Ala Lys Arg Asn Arg Arg Ala Lys Arg Ala Arg Ala Met
        690                 695                 700
Pro Glu Glu Glu Pro Val Arg Gly Pro Ala Lys Lys Gln Lys Gln Gly
705                 710                 715                 720
Lys Lys Ser Val Phe Asp Glu Glu Leu Thr Asn Thr Ser Lys Lys Ala
                725                 730                 735
Leu Lys Gln Tyr Arg Ala Gly Pro Ser Phe Glu Glu Arg Lys Gln Leu
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Gly Leu Pro His Gln Arg Arg Gly Gly Asn Phe Lys Ser Lys Ser Arg
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<211> 5199
<212> DNA
<213> Homo sapiens

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600
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2220
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<210> 4426
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<212> PRT
<213> Homo sapiens
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     His Ile Arg Phe Lys Leu Ala Pro Pro Ser Ser Thr Leu Ser Pro Gly
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     Ser Ala Glu Asn Asn Gly Asn Ala Asn Ile Leu Ile Ala Ala Asn Gly
                     35                    40                    45
     Thr Lys Arg Lys Ala Ile Ala Ala Glu Asp Pro Ser Leu Asp Phe Arg
                 50                    55                    60
     Asn Asn Pro Thr Lys Glu Asp Leu Gly Lys Leu Gln Pro Leu Val Ala
     65                    70                    75                    80
     Ser Tyr Leu Cys Ser Asp Val Thr Ser Val Pro Ser Lys Glu Ser Leu
                     85                    90                    95
     Lys Leu Gln Gly Val Phe Ser Lys Gln Thr Val Leu Lys Ser His Pro
                     100                   105                   110
     Leu Leu Ser Gln Ser Tyr Glu Leu Arg Ala Glu Leu Leu Gly Arg Gln
                 115                   120                   125
     Pro Val Leu Glu Phe Ser Leu Glu Asn Leu Arg Thr Met Asn Thr Ser
         130                   135                   140
     Gly Gln Thr Ala Leu Pro Gln Ala Pro Val Asn Gly Leu Ala Lys Lys
     145                   150                   155                   160
     Leu Thr Lys Ser Ser Thr His Ser Asp His Asp Asn Ser Thr Ser Leu
                     165                   170                   175
     Asn Gly Gly Lys Arg Ala Leu Thr Ser Ser Ala Leu His Gly Gly Glu
                     180                   185                   190
     Met Gly Gly Ser Glu Ser Gly Asp Leu Lys Gly Gly Met Thr Asn Cys
                     195                   200                   205
     Thr Leu Pro His Arg Ser Leu Asp Val Glu His Thr Thr Leu Tyr Ser
                 210                   215                   220
     Asn Asn Ser Thr Ala Asn Lys Ser Phe Val Asn Ser Met Glu Gln Pro
     225                   230                   235                   240
     Ala Leu Gln Gly Ser Ser Arg Leu Ser Pro Gly Thr Asp Ser Ser Ser
                     245                   250                   255
     Asn Leu Gly Gly Val Lys Leu Glu Gly Lys Lys Ser Pro Leu Ser Ser
                     260                   265                   270
     Ile Leu Phe Ser Ala Leu Asp Ser Asp Thr Arg Ile Thr Ala Leu Leu
                 275                   280                   285
     Arg Arg Gln Ala Asp Ile Glu Ser Arg Ala Arg Arg Leu Gln Lys Arg
         290                   295                   300
     Leu Gln Val Val Gln Ala Lys Gln Val Glu Arg His Ile Gln His Gln
     305                   310                   315                   320
     Leu Gly Gly Phe Leu Glu Lys Thr Leu Ser Lys Leu Pro Asn Leu Glu
                     325                   330                   335
     Ser Leu Arg Pro Arg Ser Gln Leu Met Leu Thr Arg Lys Ala Glu Ala
                     340                   345                   350
     Ala Leu Arg Lys Ala Ala Ser Glu Thr Thr Thr Ser Glu Gly Leu Ser
                 355                   360                   365
     Asn Phe Leu Lys Ser Asn Ser Ile Ser Glu Glu Leu Glu Arg Phe Thr
         370                   375                   380
     Ala Ser Gly Ile Ala Asn Leu Arg Cys Ser Glu Gln Ala Phe Asp Ser
     385                   390                   395                   400
     Asp Val Thr Asp Ser Ser Ser Gly Gly Glu Ser Asp Ile Glu Glu Glu
                     405                   410                   415
     Glu Leu Thr Arg Ala Asp Pro Glu Gln Arg His Val Pro Leu Arg Arg
                 420                   425                   430
     Arg Ser Glu Trp Lys Trp Ala Ala Asp Arg Ala Ala Ile Val Ser Arg
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Trp Asn Trp Leu Gln Ala His Val Ser Asp Leu Glu Tyr Arg Ile Arg
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Gln Gln Thr Asp Ile Tyr Lys Gln Ile Arg Ala Asn Lys Gly Leu Ile
465                    470                    475                    480
Val Leu Gly Glu Val Pro Pro Pro Glu His Thr Thr Asp Leu Phe Leu
                485                    490                    495
Pro Leu Ser Ser Glu Val Lys Thr Asp His Gly Thr Asp Lys Leu Ile
                500                    505                    510
Glu Ser Val Ser Gln Pro Leu Glu Asn His Gly Ala Pro Ile Ile Gly
    515                    520                    525
His Ile Ser Glu Ser Leu Ser Thr Lys Ser Cys Gly Ala Leu Arg Pro
    530                    535                    540
Val Asn Gly Val Ile Asn Thr Leu Gln Pro Val Leu Ala Asp His Ile
545                    550                    555                    560
Pro Gly Asp Ser Ser Asp Ala Glu Glu Gln Leu His Lys Lys Gln Arg
                565                    570                    575
Leu Asn Leu Val Ser Ser Ser Ser Asp Gly Thr Cys Val Ala Ala Arg
                580                    585                    590
Thr Arg Pro Val Leu Ser Cys Lys Lys Arg Arg Leu Val Arg Pro Asn
    595                    600                    605
Ser Ile Val Pro Leu Ser Lys Lys Val His Arg Asn Ser Thr Ile Arg
    610                    615                    620
Pro Gly Cys Asp Val Asn Pro Ser Cys Ala Leu Cys Gly Ser Gly Ser
625                    630                    635                    640
Ile Asn Thr Met Pro Pro Glu Ile His Tyr Glu Ala Pro Leu Leu Glu
                645                    650                    655
Arg Leu Ser Gln Leu Asp Ser Cys Val His Pro Val Leu Ala Phe Pro
                660                    665                    670
Asp Asp Val Pro Thr Ser Leu His Phe Gln Ser Met Leu Lys Ser Gln
    675                    680                    685
Trp Gln Asn Lys Pro Phe Asp Lys Ile Lys Pro Pro Lys Lys Leu Ser
    690                    695                    700
Leu Lys His Arg Ala Pro Met Pro Gly Ser Leu Pro Asp Ser Ala Arg
705                    710                    715                    720
Lys Asp Arg His Lys Leu Val Ser Ser Phe Leu Thr Thr Ala Lys Leu
                725                    730                    735
Ser His His Gln Thr Arg Pro Asp Arg Thr His Arg Gln His Leu Asp
                740                    745                    750
Asp Val Gly Ala Val Pro Met Val Glu Arg Val Thr Ala Pro Lys Ala
    755                    760                    765
Glu Arg Leu Leu Asn Pro Pro Pro Val His Asp Pro Asn His Ser
    770                    775                    780
Lys Met Arg Leu Arg Asp His Ser Ser Glu Arg Ser Glu Val Leu Lys
785                    790                    795                    800
His His Thr Asp Met Ser Ser Ser Ser Tyr Leu Ala Ala Thr His His
                805                    810                    815
Pro Pro His Ser Pro Leu Val Arg Gln Leu Ser Thr Ser Ser Asp Ser
                820                    825                    830
Pro Ala Pro Ala Ser Ser Ser Ser Gln Val Thr Ala Ser Thr Ser Gln
    835                    840                    845
Gln Pro Val Arg Arg Arg Arg Gly Glu Ser Ser Phe Asp Ile Asn Asn
    850                    855                    860
Ile Val Ile Pro Met Ser Val Ala Ala Thr Thr Arg Val Glu Lys Leu
```

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865                    870                    875                    880
Gln Tyr Lys Glu Ile Leu Thr Pro Ser Trp Arg Glu Val Asp Leu Gln
                    885                    890                    895
Ser Leu Lys Gly Ser Pro Asp Glu Glu Asn Glu Glu Ile Glu Asp Leu
                900                    905                    910
Ser Asp Ala Ala Phe Ala Ala Leu His Ala Lys Cys Glu Glu Met Glu
            915                    920                    925
Arg Ala Arg Trp Leu Trp Thr Thr Ser Val Pro Pro Gln Arg Arg Gly
        930                    935                    940
Ser Arg Ser Tyr Arg Ser Ser Asp Gly Arg Thr Thr Pro Gln Leu Gly
    945                    950                    955                    960
Ser Ala Asn Pro Ser Thr Pro Gln Pro Ala Ser Pro Asp Val Ser Ser
                965                    970                    975
Ser His Ser Leu Ser Glu Tyr Ser His Gly Gln Ser Pro Arg Ser Pro
            980                    985                    990
Ile Ser Pro Glu Leu His Ser Ala Pro Leu Thr Pro Val Ala Arg Asp
            995                    1000                   1005
Thr Leu Arg His Leu Ala Ser Glu Asp Thr Arg Cys Ser Thr Pro Glu
        1010                   1015                   1020
Leu Gly Leu Asp Glu Gln Ser Val Gln Pro Trp Glu Arg Arg Thr Phe
    1025                   1030                   1035                   1040
Pro Leu Ala His Ser Pro Gln Ala Glu Cys Glu Asp Gln Leu Asp Ala
                1045                   1050                   1055
Gln Glu Arg Ala Ala Arg Cys Thr Arg Arg Thr Ser Gly Ser Lys Thr
            1060                   1065                   1070
Xaa Pro Gly Asp Arg Gly Ser Ala His Leu Ala Ser His Cys Pro Pro
        1075                   1080                   1085
Gln Glu Ser Ala Ser Gly Gly Ser Ser His Ser Ser Ala Pro Asp Ser
        1090                   1095                   1100
Gln Met Ser Gly Arg Gln Pro Ser Lys Gln Thr His
    1105                   1110                   1115
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<210> 4427
<211> 4474
<212> DNA
<213> Homo sapiens

<400> 4427
nntgtggtca gggaatccag cttcttcggg tcaactcctt cctggaggat tcggatgact
60
tcagacatca tgggcgcaag acacctggta gtatagaagc caggtccatc cttaaccaca
120
atgatgacct tcccctgctt gagaccaact gctacagctg aagcactggt gtctttggaa
180
gttttctcgg tcgtgataat ctccagcagc tgcatcttgt ccacgggaga gaagtagtgc
240
atgccaatca ccttctcagg tcttttgctg acagcagcga tttcactgat tgggagagca
300
gatgtgttac tggcaaagat acagtgatct ggaatcaccg cttctacttc ctttagcact
360
ctgtgcttaa gactaaggtc ctcaaacaca gcttcaatca ccatgtcggc cttttcaaaa
420
ccttggtaat caagctgccc agtcaagttg ctgaagatgg aatccctttc aaatgatgtt
480
```

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agagctttct tcttcacttt gtcattcaat cctttgaaca cttgttgctg tcctcggcct
540
agcgcagtga gggtggcatc tttaagtata gtctttagcc ccttatccac ggagacttgg
600
gcgatgcctg ctcccatcag ccctgcacca agaatagcca gatgcttaac atccttctgt
660
cttttgttgc tattctgtat tggcatgaaa tggcaacctc aagtcctcct cccaggcagg
720
atccattgat ggcagccaca ataggctttg tggacttttc aagtttctca actattctct
780
gtgcttcttg tgatagctgt gttacttctt gaagggtctt gcaagcggct aacatgttga
840
tatcagcacc tgcaataaag cagcctggct ttgatgagat aaggacggca cttctgattt
900
gatcactagc ccagatttca ttcataactt ctgagaactc tgaatgtagc tcttcagctc
960    .
aagatggtgg cctgccgggc gattggcatc ctcagccgct tttctgcctt caggatcctc
1020
cgctcccgag gttatatatg ccgcaatttt acagggtctt ctgctttgct gaccagaacc
1080
catattaact atggagtcaa aggggatgtg gcagttgttc gaattaactc tcccaattca
1140
aaggtaaata cactgagtaa agagctacat tcagagttct cagaagttat gaatgaaatc
1200
tgggctagtg atcaaatcag aagtgccgtc cttatctcat caaagccagg ctgctttatt
1260
gcaggtgctg atatcaacat gttagccgct tgcaagaccc ttcaagaagt aacacagcta
1320
tcacaagaag cacagagaat agttgagaaa cttgaaaagt ccacaaagcc tattgtggct
1380
gccatcaatg gatcctgcct gggaggagga cttgaggttg ccatttcatg ccaatacaga
1440
atagcaacaa aagacagaaa aacagtatta ggtacccctg aagttttgct gggggcctta
1500
ccaggagcag gaggcacaca aaggctgccc aaaatggtgg gtgtgcctgc tgctttggac
1560
atgatgctga ctggtagaag cattcgtgca gacagggcaa agaaaatggg actggttgac
1620
caactggtgg aacccctggg accaggacta aaacctccag aggaacggac aatagaatac
1680
ctagaagaag ttgcaattac ttttgccaaa ggactagctg ataagaagat ctctccaaag
1740
agagacaagg gattggtgga aaaattgaca gcgtatgcca tgactattcc atttgtcagg
1800
caacaggttt acaaaaaagt ggaagaaaaa gtgcgaaagc agactaaagg cctttatcct
1860
gcacctctga aaataattga tgtggtaaag actggaattg agcaagggag tgatgccggt
1920
tatctctgtg aatctcagaa atttggagag cttgtaatga ccaaagaatc aaaggccttg
1980
atgggactct accatggtca ggtcctgtgc aagaagaata aatttggagc cccacagaag
2040
gatgttaagc atctggctat tcttggtgca gggctgatgg gagcaggcat cgcccaagtc
2100
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3619

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tccgtggata aggggctaaa gactatactt aaagatgcca ccctcactgc gctagaccga
2160
ggacagcaac aagtgttcaa aggattgaat gacaaagtga agaagaaagc tctaacatca
2220
tttgaaaggg attccatctt cagcaacttg actgggcagc ttgattacca aggttttgaa
2280
aaggccgaca tggtgattga agctgtgttt gaggacctta gtcttaagca cagagtgcta
2340
aaggaagtag aagcggtgat tccagatcac tgtatctttg ccagtaacac atctgctctc
2400
ccaatcagtg aaatcgctgc tgtcagcaaa agacctgaga aggtgattgg catgcactac
2460
ttctctcccg tggacaagat gcagctgctg gagattatca cgaccgagaa aacttccaaa
2520
gacaccagtg cttcagctgt agcagttggt ctcaagcagg ggaaggtcat cattgtggtt
2580
aaggatggac ctggcttcta tactaccagg tgtcttgcgc ccatgatgtc tgaagtcatc
2640
cgaatcctcc aggaaggagt tgacccgaag aagctggatt ccctgaccac aagctttggc
2700
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2760
gcggaagatc tgggcaaagt cttttgggga g cggtttggag gtggaaaccc agaactgctg
2820
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2880
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2940
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3000
agatttgtga atgaggcagt catgtgcctg caagagggga tcttggccac acctgcagag
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ggagacatcg gagccgtctt tgggcttggc ttcccgcctt gtctgggagg gccttttccgc
3120
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3180
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3240
aagttctacc agtgagcagg cctcatgcct cgctcagtca gttttcagat aagccggtgc
3300
aagaccgggg tttggtggtg acggacctca aagctgagag tgtggttctt gagcatcgca
3360
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3420
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3480
tctcacccgt ctggctgcag ctgaagagac gtggccgtga gatgtttgag gtcacgggcc
3540
tccacgacgt ggaccagggg tggatgcgag ctgtcaggaa gcatgccaag ggcctgcaca
3600
tagtgcctcg gctcctgttt gaggactgga cttacgatga tttccggaac gtcttagaca
3660
gtgaggatga gatagaggag ctgagcaaga ccgtggtcca ggtggcaaag aaccagcatt
3720
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tcgatggctt cgtggtggag gtctggaacc agctgctaag ccagaagcgc gtgggcctca
3780
tccacatgct cacccacttg gccgaggctc tgcaccaggc ccggctgctg gccctcctgg
3840
tcatcccgcc tgccatcacc cccgggaccg accagctggg catgttcacg cacaaggagt
3900
ttgagcagct ggcccccgtg ctggatggtt tcagcctcat gacctacgac tactctacag
3960
cgcatcagcc tggccctaat gcacccctgt cctgggttcg agcctgcgtc caggtcctgg
4020
acccgaagtc caagtggcga agcaaaatcc tcctggggct caacttctat ggtatggact
4080
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4140
aggaccacag gccccggatg gtgtgggaca gccaggcctc agagcacttc ttcgagtaca
4200
agaagagccg cagtgggagg cacgtcgtct tctacccaac cctgaagtcc ctgcaggtgc
4260
ggctggagct ggcccgggag ctgggcgttg gggtctctat ctgggagctg ggccagggcc
4320
tggactactt ctacgacctg ctctaggtgg gcattgcggc ctccgcggtg gacgtgttct
4380
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4440
gaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaa
4474


<210> 4428
<211> 763
<212> PRT
<213> Homo sapiens

<400> 4428
Met Val Ala Cys Arg Ala Ile Gly Ile Leu Ser Arg Phe Ser Ala Phe
1               5                   10                  15
Arg Ile Leu Arg Ser Arg Gly Tyr Ile Cys Arg Asn Phe Thr Gly Ser
            20                  25                  30
Ser Ala Leu Leu Thr Arg Thr His Ile Asn Tyr Gly Val Lys Gly Asp
        35                  40                  45
Val Ala Val Val Arg Ile Asn Ser Pro Asn Ser Lys Val Asn Thr Leu
    50                  55                  60
Ser Lys Glu Leu His Ser Glu Phe Ser Glu Val Met Asn Glu Ile Trp
65                  70                  75                  80
Ala Ser Asp Gln Ile Arg Ser Ala Val Leu Ile Ser Ser Lys Pro Gly
                85                  90                  95
Cys Phe Ile Ala Gly Ala Asp Ile Asn Met Leu Ala Ala Cys Lys Thr
                100                 105                 110
Leu Gln Glu Val Thr Gln Leu Ser Gln Glu Ala Gln Arg Ile Val Glu
            115                 120                 125
Lys Leu Glu Lys Ser Thr Lys Pro Ile Val Ala Ala Ile Asn Gly Ser
        130                 135                 140
Cys Leu Gly Gly Gly Leu Glu Val Ala Ile Ser Cys Gln Tyr Arg Ile
145                 150                 155                 160
Ala Thr Lys Asp Arg Lys Thr Val Leu Gly Thr Pro Glu Val Leu Leu
```

```
                      165                   170                   175
Gly Ala Leu Pro Gly Ala Gly Gly Thr Gln Arg Leu Pro Lys Met Val
            180                   185                   190
Gly Val Pro Ala Ala Leu Asp Met Met Leu Thr Gly Arg Ser Ile Arg
        195                   200                   205
Ala Asp Arg Ala Lys Lys Met Gly Leu Val Asp Gln Leu Val Glu Pro
    210                   215                   220
Leu Gly Pro Gly Leu Lys Pro Pro Glu Glu Arg Thr Ile Glu Tyr Leu
225                   230                   235                   240
Glu Glu Val Ala Ile Thr Phe Ala Lys Gly Leu Ala Asp Lys Lys Ile
                245                   250                   255
Ser Pro Lys Arg Asp Lys Gly Leu Val Glu Lys Leu Thr Ala Tyr Ala
                260                   265                   270
Met Thr Ile Pro Phe Val Arg Gln Gln Val Tyr Lys Lys Val Glu Glu
            275                   280                   285
Lys Val Arg Lys Gln Thr Lys Gly Leu Tyr Pro Ala Pro Leu Lys Ile
        290                   295                   300
Ile Asp Val Val Lys Thr Gly Ile Glu Gln Gly Ser Asp Ala Gly Tyr
305                   310                   315                   320
Leu Cys Glu Ser Gln Lys Phe Gly Glu Leu Val Met Thr Lys Glu Ser
                325                   330                   335
Lys Ala Leu Met Gly Leu Tyr His Gly Gln Val Leu Cys Lys Lys Asn
                340                   345                   350
Lys Phe Gly Ala Pro Gln Lys Asp Val Lys His Leu Ala Ile Leu Gly
            355                   360                   365
Ala Gly Leu Met Gly Ala Gly Ile Ala Gln Val Ser Val Asp Lys Gly
        370                   375                   380
Leu Lys Thr Ile Leu Lys Asp Ala Thr Leu Thr Ala Leu Asp Arg Gly
385                   390                   395                   400
Gln Gln Gln Val Phe Lys Gly Leu Asn Asp Lys Val Lys Lys Lys Ala
                405                   410                   415
Leu Thr Ser Phe Glu Arg Asp Ser Ile Phe Ser Asn Leu Thr Gly Gln
            420                   425                   430
Leu Asp Tyr Gln Gly Phe Glu Lys Ala Asp Met Val Ile Glu Ala Val
        435                   440                   445
Phe Glu Asp Leu Ser Leu Lys His Arg Val Leu Lys Glu Val Glu Ala
    450                   455                   460
Val Ile Pro Asp His Cys Ile Phe Ala Ser Asn Thr Ser Ala Leu Pro
465                   470                   475                   480
Ile Ser Glu Ile Ala Ala Val Ser Lys Arg Pro Glu Lys Val Ile Gly
                485                   490                   495
Met His Tyr Phe Ser Pro Val Asp Lys Met Gln Leu Leu Glu Ile Ile
            500                   505                   510
Thr Thr Glu Lys Thr Ser Lys Asp Thr Ser Ala Ser Ala Val Ala Val
            515                   520                   525
Gly Leu Lys Gln Gly Lys Val Ile Ile Val Val Lys Asp Gly Pro Gly
        530                   535                   540
Phe Tyr Thr Thr Arg Cys Leu Ala Pro Met Met Ser Glu Val Ile Arg
545                   550                   555                   560
Ile Leu Gln Glu Gly Val Asp Pro Lys Lys Leu Asp Ser Leu Thr Thr
                565                   570                   575
Ser Phe Gly Phe Pro Val Gly Ala Ala Thr Leu Val Asp Glu Val Gly
            580                   585                   590
Val Asp Val Ala Lys His Val Ala Glu Asp Leu Gly Lys Val Phe Gly
```

```
              595                   600                   605
Glu Arg Phe Gly Gly Gly Asn Pro Glu Leu Leu Thr Gln Met Val Ser
        610                   615                   620
Lys Gly Phe Leu Gly Arg Lys Ser Gly Lys Gly Phe Tyr Ile Tyr Gln
625                   630                   635                   640
Glu Gly Val Lys Arg Lys Asp Leu Asn Ser Asp Met Asp Ser Ile Leu
                645                   650                   655
Ala Ser Leu Lys Leu Pro Pro Lys Ser Glu Val Ser Ser Asp Glu Asp
                660                   665                   670
Ile Gln Phe Arg Leu Val Thr Arg Phe Val Asn Glu Ala Val Met Cys
                675                   680                   685
Leu Gln Glu Gly Ile Leu Ala Thr Pro Ala Glu Gly Asp Ile Gly Ala
        690                   695                   700
Val Phe Gly Leu Gly Phe Pro Pro Cys Leu Gly Gly Pro Phe Arg Phe
705                   710                   715                   720
Val Asp Leu Tyr Gly Ala Gln Lys Ile Val Asp Arg Leu Lys Lys Tyr
                725                   730                   735
Glu Ala Ala Tyr Gly Lys Gln Phe Thr Pro Cys Gln Leu Leu Ala Asp
                740                   745                   750
His Ala Asn Ser Pro Asn Lys Lys Phe Tyr Gln
    .   ..  755                   760
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<210> 4429
<211> 981
<212> DNA
<213> Homo sapiens

<400> 4429
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aatccaggca tcacttgccc ctgattttat ttcattttca cacactctgt ttaggagaca
120
ctgcttgctc caactggctc catctctccg ttaccggtga ggcaggcaca gtgctgcagt
180
ggcagaatgg aagtacccag gctgacttgc tctcagccag acacgacctc ttctctgagg
240
agggtgatgc caataaatgg aactccaata ggtaggcttc gctctgccct tccacaagtg
300
aacacacgcc gtgagtccct aaatcgccag gctccgcagc ctcgcagaaa gcctagtttc
360
cagacggtag gtatcccatt catcccttgg catcgggaac caaagggaat gcagacagat
420
cccggtcgtg cactacattc ccaaaccttg gcacgcacgc gaaggcttgg ggcgccccgg
480
cgcgcccttc ctccgaggcc tccaccaccc gcggactcac cactatgcga gctgaaccac
540
ctgggtgcga tgtgcagagg tagagcatcc gccagcgagg ttctgggagg cccggttacc
600
gcttcccgtt tttatggtng accgccgccg gtctcctggt aaccattgcc atgggcatag
660
gtggagtcgg acgcagaccc tccgccgccg ggcgccacta ccaccctgag gtgtccaaag
720
ccgccagcgt catcaaccag gccctgtcca tgcctgaggt cagcatcgcg cacaccaacg
780
```

```
acacgccctt ctctctctct ctctctctct ctctctctct ctcccccgtc tnnccctccc
840
gagttctccg gctctcgcgg ccggcggggc cgggcggcga acgaacgagc gagcgaacga
900
acgggcacgc gggccccgcc cgcgcacgcg ccgcgtcgcg gtggggggt gggtgtgcgg
960
agggaagcgc gcggcggcgg c
981
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```
<210> 4430
<211> 151
<212> PRT
<213> Homo sapiens
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<400> 4430
Met Glu Val Pro Arg Leu Thr Cys Ser Gln Pro Asp Thr Thr Ser Ser
1               5                  10                  15
Leu Arg Arg Val Met Pro Ile Asn Gly Thr Pro Ile Gly Arg Leu Arg
            20                  25                  30
Ser Ala Leu Pro Gln Val Asn Thr Arg Arg Glu Ser Leu Asn Arg Gln
            35                  40                  45
Ala Pro Gln Pro Arg Arg Lys Pro Ser Phe Gln Thr Val Gly Ile Pro
        50                  55                  60
Phe Ile Pro Trp His Arg Glu Pro Lys Gly Met Gln Thr Asp Pro Gly
65                  70                  75                  80
Arg Ala Leu His Ser Gln Thr Leu Ala Arg Thr Arg Arg Leu Gly Ala
                85                  90                  95
Pro Arg Arg Ala Leu Pro Pro Arg Pro Pro Pro Ala Asp Ser Pro
            100                 105                 110
Leu Cys Glu Leu Asn His Leu Gly Ala Met Cys Arg Gly Arg Ala Ser
        115                 120                 125
Ala Ser Glu Val Leu Gly Gly Pro Val Thr Ala Ser Arg Phe Tyr Gly
        130                 135                 140
Xaa Pro Pro Pro Val Ser Trp
145                 150
```

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<210> 4431
<211> 507
<212> DNA
<213> Homo sapiens
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<400> 4431
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ctgggtgacc gacccatccc cgtcaccttc aagagggcca tcgcagcgct ctccttctgg
120
cagaaggtca ggctggcttg gggcctgtgc ttcctgtcag accccatcag gtagggctgc
180
ccccgggacc ctggccggcc tgcagggtgg tctgtgggag gctccaggcc ctcctgtgca
240
ggtccaagcg cagccaatcc tcactcaagg ccttccctgc cctttccttc gccacaaat
300
cccaaacaaa cgtgctgtgg tccctgcccg gtgtccacag tgccagcccc accctcccag
360
```

cccgttgccc atccctgcgg ggctgcagcc atccctctcc acagcaagga tgacgtggaa
420
cgctgcaagc agaaggccta ctggagcaga tgatggccga gatgattggc gagttcccag
480
acctgcaccg caccatcgtt tttggag
507

<210> 4432
<211> 57
<212> PRT
<213> Homo sapiens

<400> 4432
Gly Gly Glu Phe Arg Glu Ala Phe Lys Glu Ala Ser Lys Val Pro Phe
1   5   10   15
Cys Lys Phe His Leu Gly Asp Arg Pro Ile Pro Val Thr Phe Lys Arg
            20   25   30
Ala Ile Ala Ala Leu Ser Phe Trp Gln Lys Val Arg Leu Ala Trp Gly
            35   40   45
Leu Cys Phe Leu Ser Asp Pro Ile Arg
    50   55

<210> 4433
<211> 447
<212> DNA
<213> Homo sapiens

<400> 4433
ntgtacaaca cctcgtcgcc gagggagatg gtggcccagt tcctcctcgt ggacggcaac
60
gtgaccaaca tcaccaccgt cagcctctgg gaagaattct cctccagcga cctcgcagat
120
ctccgcttcc tggacatgag ccagaaccag ttccagtacc tgccagacgg cttcctgagg
180
aaaatgcctt ccctctccca cctgaacctc caccagaatt gcctgatgac gcttcacatt
240
cgggagcacg agcccccccgg agcgctcacc gagctggacc tgagccacaa ccagctgtcg
300
gagctgcacc tggctccggg gctggccagc tgcctgggca gcctgcgctt gttcaacctg
360
agctccaacc agctcctggg cgtcccccct ggcctcttcg ccaatgctag gaacatcact
420
acacttgaca tgagccacaa tcagatc
447

<210> 4434
<211> 149
<212> PRT
<213> Homo sapiens

<400> 4434
Xaa Tyr Asn Thr Ser Ser Pro Arg Glu Met Val Ala Gln Phe Leu Leu
1   5   10   15
Val Asp Gly Asn Val Thr Asn Ile Thr Thr Val Ser Leu Trp Glu Glu

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              20                   25                   30
Phe Ser Ser Ser Asp Leu Ala Asp Leu Arg Phe Leu Asp Met Ser Gln
              35                   40                   45
Asn Gln Phe Gln Tyr Leu Pro Asp Gly Phe Leu Arg Lys Met Pro Ser
          50                   55                   60
Leu Ser His Leu Asn Leu His Gln Asn Cys Leu Met Thr Leu His Ile
65                   70                   75                   80
Arg Glu His Glu Pro Pro Gly Ala Leu Thr Glu Leu Asp Leu Ser His
                  85                   90                   95
Asn Gln Leu Ser Glu Leu His Leu Ala Pro Gly Leu Ala Ser Cys Leu
              100                  105                  110
Gly Ser Leu Arg Leu Phe Asn Leu Ser Ser Asn Gln Leu Leu Gly Val
          115                  120                  125
Pro Pro Gly Leu Phe Ala Asn Ala Arg Asn Ile Thr Thr Leu Asp Met
          130                  135                  140
Ser His Asn Gln Ile
145


<210> 4435
<211> 783
<212> DNA
<213> Homo sapiens


<400> 4435
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cacccctttcg tggtcaatct gtggtactcc ttccaggatg aggaggacat gttcatggtg
120
gtggacctgc tcctgggagg cgacctgcgc taccatctgc agcagaatgt gcatttcaca
180
gaggggactg tgaaactcta catctgtgag ctggcactgg ccctggagta tcttcagagg
240
taccacatca tccacagaga catcaagcca gacaatatcc tgctggatga acacggacat
300
gttcacatta cagacttcaa catagcgacg gtagtgaaag gagcagaaag ggcttcctcc
360
atggctggca ccaagcccta catggctcca gaagtattcc aggtgtacat ggacagaggc
420
cccggatact cgtacctgt cgactggtgg tccctgggca tcacagccta tgagctgctg
480
cggggctgga ggccgtacga aatccactcg gtcacgccca tcgatgaaat cctcaacatg
540
ttcaaggtgg agcgtgtcca ctactcctcc acgtggtgca aggggatggt ggccctgcta
600
aggaagctcc tgaccaagga tcctgagagc cgcgtgtcca gccttcatga catacagagc
660
gtgccctact ggccgacat gaactgggac gcggtgttca gaaggcact gatgcccggc
720
tttgtgccca ataaagggag gttgaactgc gatcccacat ttgagcttga agagatgatt
780
cta
783


<210> 4436
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<211> 261
<212> PRT
<213> Homo sapiens

<400> 4436
Xaa Ala Arg Asp Glu Val Arg Asn Val Phe Arg Glu Leu Gln Ile Met
  1               5                  10                  15
Gln Gly Leu Glu His Pro Phe Val Val Asn Leu Trp Tyr Ser Phe Gln
             20                  25                  30
Asp Glu Glu Asp Met Phe Met Val Val Asp Leu Leu Leu Gly Gly Asp
         35                  40                  45
Leu Arg Tyr His Leu Gln Gln Asn Val His Phe Thr Glu Gly Thr Val
     50                  55                  60
Lys Leu Tyr Ile Cys Glu Leu Ala Leu Ala Leu Glu Tyr Leu Gln Arg
 65                  70                  75                  80
Tyr His Ile Ile His Arg Asp Ile Lys Pro Asp Asn Ile Leu Leu Asp
                 85                  90                  95
Glu His Gly His Val His Ile Thr Asp Phe Asn Ile Ala Thr Val Val
             100                 105                 110
Lys Gly Ala Glu Arg Ala Ser Ser Met Ala Gly Thr Lys Pro Tyr Met
         115                 120                 125
Ala Pro Glu Val Phe Gln Val Tyr Met Asp Arg Gly Pro Gly Tyr Ser
     130                 135                 140
Tyr Pro Val Asp Trp Trp Ser Leu Gly Ile Thr Ala Tyr Glu Leu Leu
145                 150                 155                 160
Arg Gly Trp Arg Pro Tyr Glu Ile His Ser Val Thr Pro Ile Asp Glu
                 165                 170                 175
Ile Leu Asn Met Phe Lys Val Glu Arg Val His Tyr Ser Ser Thr Trp
             180                 185                 190
Cys Lys Gly Met Val Ala Leu Leu Arg Lys Leu Leu Thr Lys Asp Pro
         195                 200                 205
Glu Ser Arg Val Ser Ser Leu His Asp Ile Gln Ser Val Pro Tyr Leu
     210                 215                 220
Ala Asp Met Asn Trp Asp Ala Val Phe Lys Lys Ala Leu Met Pro Gly
225                 230                 235                 240
Phe Val Pro Asn Lys Gly Arg Leu Asn Cys Asp Pro Thr Phe Glu Leu
                 245                 250                 255
Glu Glu Met Ile Leu
                 260


<210> 4437
<211> 620
<212> DNA
<213> Homo sapiens

<400> 4437
nnctgcaggg tgtacgtggt ggggacagcc cacttcagcg acgacagcaa gagggacgtt
60
gtgaagacca tccgggaggt gcagcctgac gtggtggtcg tggagctctg ccaatatcgt
120
gtgtccatgc tgaagatgga cgagagcacg ctgctgcggg aggcccagga gctcagcctg
180
gagaagctgc agcaggccgt gaggcagaac gggctcatgt cggggctgat gcagatgctg
240
```

ctgctgaagg tgtctgcaca catcaccgag cagctgggca tggccccagg tggcgagttc
300
agggaggcct tcaaggaggc cagcaaggtg cctttctgca agttccacct gggtgaccga
360
cccatccccg tcaccttcaa gagggccatc gcagcgctct ccttctggca gaaggtcagg
420
ctggcttggg gcctgtgctt cctgtcagac cccatcagca aggatgacgt ggaacgctgc
480
aagcagaagg acctactgga gcagatgatg gccgagatga ttggcgagtt cccagacctg
540
caccgcacca tcgtctcgga gcgcgacgtc tacctaacct acatgctgcg ccaggccgcg
600
cggcgcctcg agctgcctcg
620

<210> 4438
<211> 206
<212> PRT
<213> Homo sapiens

<400> 4438
Xaa Cys Arg Val Tyr Val Val Gly Thr Ala His Phe Ser Asp Asp Ser
 1   5   10   15
Lys Arg Asp Val Val Lys Thr Ile Arg Glu Val Gln Pro Asp Val Val
                20   25   30
Val Val Glu Leu Cys Gln Tyr Arg Val Ser Met Leu Lys Met Asp Glu
            35   40   45
Ser Thr Leu Leu Arg Glu Ala Gln Glu Leu Ser Leu Glu Lys Leu Gln
        50   55   60
Gln Ala Val Arg Gln Asn Gly Leu Met Ser Gly Leu Met Gln Met Leu
65   70   75   80
Leu Leu Lys Val Ser Ala His Ile Thr Glu Gln Leu Gly Met Ala Pro
                85   90   95
Gly Gly Glu Phe Arg Glu Ala Phe Lys Glu Ala Ser Lys Val Pro Phe
                100   105   110
Cys Lys Phe His Leu Gly Asp Arg Pro Ile Pro Val Thr Phe Lys Arg
            115   120   125
Ala Ile Ala Ala Leu Ser Phe Trp Gln Lys Val Arg Leu Ala Trp Gly
        130   135   140
Leu Cys Phe Leu Ser Asp Pro Ile Ser Lys Asp Asp Val Glu Arg Cys
145   150   155   160
Lys Gln Lys Asp Leu Leu Glu Gln Met Met Ala Glu Met Ile Gly Glu
                165   170   175
Phe Pro Asp Leu His Arg Thr Ile Val Ser Glu Arg Asp Val Tyr Leu
                180   185   190
Thr Tyr Met Leu Arg Gln Ala Ala Arg Arg Leu Glu Leu Pro
                195   200   205

<210> 4439
<211> 2121
<212> DNA
<213> Homo sapiens

<400> 4439

3628

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nttttttttt ttgaacttct atatctatat tttatatttt aagattggga cagagaaact
60
tcccagatat ttgacgtaag aatttgtttt gaaaaagttt ggtaattaat ataaaactac
120
tctaaaatta acttttattg ttagagacac atctttagaa aagtttgtaa atatcaacat
180
ttaccatctt attttttcct ttgagaccaa gcatcacaga ccaaaagcca caaagtttac
240
aataatttat tattgttgca tgacatttgc cagtaaaata aattatagaa actatagagt
300
ctttataaac tattttgtat atcatattca cttcctaatg cttactgcag taactgtatg
360
aaatttaatt agattacgtt ttagcattag tcagaagatt taaaaaatat gtaaaatgtt
420
ttcacagtac tttggattta taaaagaccc cattatttta acttttgtgc aacctgtttg
480
aaatgtataa aaaacctttt acaaaccaaa aggtggcgta aggttttact gagttgctga
540
agacatctta ctttcttgaa tttctactta acatccatgt ggtgcacttt ttcaggcatt
600
gtaataagtg caaataaata atcaattatt gatttctaaa aatctatacc aatagacaat
660
actcaggctt ggaaatattt tgaacactca gatataaaaa ttcagtaaac aatttatgca
720
tggtattttc tctccctgtc ctccctctcc ctcctccctt ccctatcta tttggttaaa
780
aaaaaaaaag ttcaacttcg atttaagtcc tagggcctga caaagtgacc ctggataaat
840
gtcatctcca gccatctgtt ttctttagtt ctcattacat ctgtccaggc tcttctatca
900
gcatcaatcc tttcctgcag ggacggaaga gttttcaaat ccttgctgaa agcattttgt
960
tctcctctgt aacagcacag ggcatgaaat tgtttggagt ctttgtaacc agtctgttca
1020
gtcctggtcc ctttccagtc ccggtccctt tccagcctct ggagtcctga cagaagagaa
1080
gcttgtaagg tagcagcaaa atgctgcatc tgttagaatc tcacaaactc acttggtctt
1140
tgaatgtcca ttcttggata acgtccttat ccatcctctt ctcttcagtg aactttgatg
1200
gaatatttcc gcagtttcag aaactggaaa agcttgtctt ttgtcctctt cttcaaggcc
1260
atcagggcac gcgttttctc ctccacatct tgatctatgg caaaaatgat cttggctctc
1320
tcctctgctt tcttgtctcc agagtttctg aagagccttt ctagtgattc ttggtctgtg
1380
ttttcaaaga tgttgcccac ggctttctta cgagaggctg tgtcgaagtg gtagccatgg
1440
atggatgggc tgactcgtag cgacgtggac atgatgatgg cttggtggct tcgctttgct
1500
ttcatcgatg tggggatctt ccggaattca gctcccaggc tttccatgat tggagctgat
1560
tcatctgaag agaaattttt gcgtagaatt ggaagattcg gttatgggta tggcccttat
1620
```

```
cagccagttc cagaacaacc actataccca caaccatacc aaccacaata ccaacaatat
1680
accttttaat atcatcagta actgcaggac atgattatgg aggtttgact ggcaaatacg
1740
acttctacat ccatattctc atctttcata ccatatcaca ctactaccac tttttgaaga
1800
attatcataa ggcaatgcag aataaaagaa ataccatgat ttactgtata ctctttgttt
1860
caggatactt cccttcctaa ttatcatttg attagatact tgcaatttaa actgttaagc
1920
tgtgttcact gctgtttctg aataatagaa attcattcct ctccaaaagc aataaatttc
1980
aagcacattt tccaatacct gtggcatcac actactacca ctttttgaag aatcatcaaa
2040
gggcaatgca aatgaaaaac attataattt actgtatact ctttgtttca ggatacttgc
2100
cttttcaatt gtcacttgat g
2121


<210> 4440
<211> 82
<212> PRT
<213> Homo sapiens

<400> 4440
Met Asp Gly Leu Thr Arg Ser Asp Val Asp Met Met Met Ala Trp Trp
1               5                   10                  15
Leu Arg Phe Ala Phe Ile Asp Val Gly Ile Phe Arg Asn Ser Ala Pro
            20                  25                  30
Arg Leu Ser Met Ile Gly Ala Asp Ser Ser Glu Glu Lys Phe Leu Arg
        35                  40                  45
Arg Ile Gly Arg Phe Gly Tyr Gly Tyr Gly Pro Tyr Gln Pro Val Pro
        50                  55                  60
Glu Gln Pro Leu Tyr Pro Gln Pro Tyr Gln Pro Gln Tyr Gln Gln Tyr
65                  70                  75                  80
Thr Phe


<210> 4441
<211> 2055
<212> DNA
<213> Homo sapiens

<400> 4441
ntaggaaggg gaggggaagg ggaaggcgag aagggagag gcagggaaa gaggggaaga
60
gtcgtgggag ctgggagagg agggaaagag gggaagagtc gtgggagctg gcagaggagg
120
gaaaggggga gccgaacgtg aagggcgaag ggcggggcgg ggcaggagag tcggggtata
180
gagcaggcag gtgttaatgg catgggaagg aagagtaaga agtggggcaa gaaggtgtcg
240
cggtacgagg ggaaggtgag actcaagaag gtgccggcta agaagctggt gccggcgtgg
300
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```
aaggagaagg tgctgtgggc cctgctggca gtgctcctgg cgtcgtggag gctgtgggcg
360
atcaaggatt tccaggaatg cacctggcag gttgtcctga acgagtttaa gagggtaggc
420
gagagtggtg tgagcgacag cttctttgag caagagcccg tggacacagt gagcagcttg
480
tttcacatgc tggtggactc acccatcgac ccgagcgaga aatacctggg cttcccttac
540
tacctgaaga tcaactactc ctgcgaggaa aagccctctg aggacctggt gcgcatgggc
600
cacctgacgg ggctaaagcc cctggtgctg gtcaccttcc agtccccagt caacttctac
660
cgctggaaga tagagcagct gcagatccag atggaggctg ccccccttccg cagcaaaggt
720
gggcctgggg gaggcgggag ggatcgcaac ctggcaggga tgaatatcaa cggcttcctg
780
aagagagacc gggacaataa catccaattc actgtgggag aggagctctt caacctgatg
840
ccccagtact ttgtgggtgt ctcatcgagg cccttgtggc acactgtgga ccagtcacct
900
gtgcttatcc tgggaggcat tcccaatgag aagtacgtcc tgatgactga caccagcttc
960
aaggacttct ctctcgtgga ggtgaacggt gtggggcaga tgctgagcat tgacagttgc
1020
tgggtgggct ccttctactg cccccattct ggcttcacag ccaccatcta tgacactatt
1080
gccaccgaga gcaccctctt cattcggcag aaccagctgg tctactattt tacaggcacc
1140
tataccacac tctatgagag aaaccgcggc agtggtgagt gtgctgtggc tggacccacg
1200
cctggggagg gcaccctggt gaaccccctcc actgaaggca gttggattcg tgtcctggcc
1260
agcgagtgca tcaagaagct gtgccctgtg tatttccata gcaatggctc tgagtacata
1320
atggccctca ccacgggcaa gcatgagggt tatgtacact cgggaccat cagagttacc
1380
acctgctcca taatttggtc tgaatacatc gcgggtgagt atactctact gctgctggtg
1440
gagagtggat atggtaatgc aagtaaacgt ttccaggtgg tcagctacaa cacagctagt
1500
gatgacctgg aacttctcta ccacatccca gaattcatcc ctgaagctcg aggattggag
1560
ttcctgatga tcctagggac agagtcctac accagcactg caatggcccc caagggcatc
1620
ttctgtaacc cgtacaacaa tctgatcttc atctggggca acttcctcct gcagagatct
1680
ggtacctcct ggagggcagc taccgggtct accagctgtt cccttccaag ggctggcagg
1740
tgcacatcag cttaaagctg atgcaacagt cctctctcta cgcatccaat gagaccatgc
1800
tgaccctctt ctacgaagac agcaaactgt accaggtgcc cggtggagct atgcggggac
1860
atcggggcac cccaggaggg ctgaccccag ctcacctggc cctgccttcc ccctgcagct
1920
```

ggtgtacctt atgaacaacc agaagggcca gctggtcaag aggctcgtgc ccgtggagca
1980
gcttctgatg tatcaacagc acaccagcca ctatgacttg gagcggaaag ggtgagaaga
2040
caccggacca tgaca
2055

<210> 4442
<211> 517
<212> PRT
<213> Homo sapiens

<400> 4442
Met Gly Arg Lys Ser Lys Lys Trp Gly Lys Lys Val Ser Arg Tyr Glu
1   5   10   15
Gly Lys Val Arg Leu Lys Lys Val Pro Ala Lys Lys Leu Val Pro Ala
                20   25   30
Trp Lys Glu Lys Val Leu Trp Ala Leu Leu Ala Val Leu Leu Ala Ser
            35   40   45
Trp Arg Leu Trp Ala Ile Lys Asp Phe Gln Glu Cys Thr Trp Gln Val
        50   55   60
Val Leu Asn Glu Phe Lys Arg Val Gly Glu Ser Gly Val Ser Asp Ser
65   70   75   80
Phe Phe Glu Gln Glu Pro Val Asp Thr Val Ser Ser Leu Phe His Met
                85   90   95
Leu Val Asp Ser Pro Ile Asp Pro Ser Glu Lys Tyr Leu Gly Phe Pro
                100   105   110
Tyr Tyr Leu Lys Ile Asn Tyr Ser Cys Glu Glu Lys Pro Ser Glu Asp
            115   120   125
Leu Val Arg Met Gly His Leu Thr Gly Leu Lys Pro Leu Val Leu Val
        130   135   140
Thr Phe Gln Ser Pro Val Asn Phe Tyr Arg Trp Lys Ile Glu Gln Leu
145   150   155   160
Gln Ile Gln Met Glu Ala Ala Pro Phe Arg Ser Lys Gly Gly Pro Gly
                165   170   175
Gly Gly Gly Arg Asp Arg Asn Leu Ala Gly Met Asn Ile Asn Gly Phe
            180   185   190
Leu Lys Arg Asp Arg Asp Asn Asn Ile Gln Phe Thr Val Gly Glu Glu
        195   200   205
Leu Phe Asn Leu Met Pro Gln Tyr Phe Val Gly Val Ser Ser Arg Pro
    210   215   220
Leu Trp His Thr Val Asp Gln Ser Pro Val Leu Ile Leu Gly Gly Ile
225   230   235   240
Pro Asn Glu Lys Tyr Val Leu Met Thr Asp Thr Ser Phe Lys Asp Phe
                245   250   255
Ser Leu Val Glu Val Asn Gly Val Gly Gln Met Leu Ser Ile Asp Ser
                260   265   270
Cys Trp Val Gly Ser Phe Tyr Cys Pro His Ser Gly Phe Thr Ala Thr
            275   280   285
Ile Tyr Asp Thr Ile Ala Thr Glu Ser Thr Leu Phe Ile Arg Gln Asn
        290   295   300
Gln Leu Val Tyr Tyr Phe Thr Gly Thr Tyr Thr Thr Leu Tyr Glu Arg
305   310   315   320
Asn Arg Gly Ser Gly Glu Cys Ala Val Ala Gly Pro Thr Pro Gly Glu

```
                     325                  330                  335
Gly Thr Leu Val Asn Pro Ser Thr Glu Gly Ser Trp Ile Arg Val Leu
                 340                  345                  350
Ala Ser Glu Cys Ile Lys Lys Leu Cys Pro Val Tyr Phe His Ser Asn
             355                  360                  365
Gly Ser Glu Tyr Ile Met Ala Leu Thr Thr Gly Lys His Glu Gly Tyr
         370                  375                  380
Val His Phe Gly Thr Ile Arg Val Thr Thr Cys Ser Ile Ile Trp Ser
     385                  390                  395                  400
Glu Tyr Ile Ala Gly Glu Tyr Thr Leu Leu Leu Leu Val Glu Ser Gly
                 405                  410                  415
Tyr Gly Asn Ala Ser Lys Arg Phe Gln Val Val Ser Tyr Asn Thr Ala
             420                  425                  430
Ser Asp Asp Leu Glu Leu Leu Tyr His Ile Pro Glu Phe Ile Pro Glu
             435                  440                  445
Ala Arg Gly Leu Glu Phe Leu Met Ile Leu Gly Thr Glu Ser Tyr Thr
     450                  455                  460
Ser Thr Ala Met Ala Pro Lys Gly Ile Phe Cys Asn Pro Tyr Asn Asn
 465                  470                  475                  480
Leu Ile Phe Ile Trp Gly Asn Phe Leu Leu Gln Arg Ser Gly Thr Ser
                 485                  490                  495
Trp Arg Ala Ala Thr Gly Ser Thr Ser Cys Ser Leu Pro Arg Ala Gly
             500                  505                  510
Arg Cys Thr Ser Ala
         515
```

```
<210> 4443
<211> 692
<212> DNA
<213> Homo sapiens

<400> 4443
agatctggag ggaggggtaag ggctggtttc atgctgactt catttctggt tggatggcct
60
ccagggtaag gtctgggccc ctgctgctga catcccccac atgtcagtct gcctgctagt
120
gggattgact aactcatcaa cgtggagttt aatgcccaac caagtgcaga ccacgctcct
180
gttttgcgtc accctctgcg aagcttcctg caaacttgac tccctgccca gtgcccccag
240
ccccaaggct ggtctccagg aggtaaggcc cgccctgcag gcaacaccgg tgcttgggct
300
cctgctgagc agttctttcc tgcgagtaac agaaccaggg agggaggtgg gctgtggcct
360
cccctgcccc tacagtcatc tcctgcagct cccaccatgc tggactcatc agcagcagag
420
caagtgaccc gactgacgct gaagctcttg ggacagaagc tggagcaaga acggcagaac
480
gtggaagggg gacctgaggg ctccacctcg agccaggaaa tgaggaccgg ccggacgatg
540
ccctgcagac tgctctgaag agaaggaggg accttctgca gagactccgg gaacaacacc
600
tcctggacga gctctctcgg gcccaggcct ggagcgggcc aagcagagga gccctcgagt
660
```

3633

```
cagccctgcc cccagagctg cccccccacgc gt
692
```

```
<210> 4444
<211> 108
<212> PRT
<213> Homo sapiens
```

```
<400> 4444
Met Ser Val Cys Leu Leu Val Gly Leu Thr Asn Ser Ser Thr Trp Ser
1               5               10              15
Leu Met Pro Asn Gln Val Gln Thr Thr Leu Leu Phe Cys Val Thr Leu
            20              25              30
Cys Glu Ala Ser Cys Lys Leu Asp Ser Leu Pro Ser Ala Pro Ser Pro
        35              40              45
Lys Ala Gly Leu Gln Glu Val Arg Pro Ala Leu Gln Ala Thr Pro Val
    50              55              60
Leu Gly Leu Leu Leu Ser Ser Ser Phe Leu Arg Val Thr Glu Pro Gly
65              70              75              80
Arg Glu Val Gly Cys Gly Leu Pro Cys Pro Tyr Ser His Leu Leu Gln
            85              90                      95
Leu Pro Pro Cys Trp Thr His Gln Gln Gln Ser Lys
            100             105
```

```
<210> 4445
<211> 901
<212> DNA
<213> Homo sapiens
```

```
<400> 4445
ggatccactg cctctgtgcc tgcctgtact gccgatgctc cagtggataa ctcagcatcc
60
cagccaaggc ccaatgccac tgaagatgga cctgcccect ggggacccag gagtcctacc
120
actcagctgt ccccaggagt gcccagaccc tcattcttat ccaggaccta ggagccctac
180
ccctggcctt ccctcatcag ccgtaaatga tgatttactg ctgttaccat catcactgcc
240
ttcagtgacc aagggccttc caaggtgcca gctctggaac gaaggatgcc cttgggaggt
300
gatgatactc aggtacacgg gtgctcaaca gattgcttcc tcctatcctc agacggtctt
360
tgcatgcatg cagccattgg cactcccatt gtgtggaagg aaaccagccc agggtcacac
420
agctggtcag cagcaacata gctggtctca aatctaaggt gcctgaccat gcctccatga
480
gggaccgcct ccaagggagg ttgatcctgg ctttggggag cctttcctgg gctgcacgaa
540
taacctccat tgttcgagac cccaaactct gctcacatct tcctttccct gtctctgctt
600
gggctatgat cacggtgact ctagcaaccc ttcatggaca ttataatact ctctgccatt
660
cacttttggt ctaatctgac ttcaacccccc acttacttgg tctctccttt tacaaccaac
720
```

3634

atggcaaaac cccatctcca caaaaattgg ataatttgat aattatcatt attgggtttc
780
tgagacgtta cacatttaac attctcttct gcacaagttg cctttgtgtg agtatactaa
840
ctttctgtag aggtatactt gtaatcacaa ataagaataa attatataaa acaaaaaaaa
900
a
901

<210> 4446
<211> 140
<212> PRT
<213> Homo sapiens

<400> 4446
Met Leu Gln Trp Ile Thr Gln His Pro Ser Gln Gly Pro Met Pro Leu
  1   5   10   15
Lys Met Asp Leu Pro Pro Gly Asp Pro Gly Val Leu Pro Leu Ser Cys
             20   25   30
Pro Gln Glu Cys Pro Asp Pro His Ser Tyr Pro Gly Pro Arg Ser Pro
         35   40   45
Thr Pro Gly Leu Pro Ser Ser Ala Val Asn Asp Asp Leu Leu Leu Leu
     50   55   60
Pro Ser Ser Leu Pro Ser Val Thr Lys Gly Leu Pro Arg Cys Gln Leu
65   70   75   80
Trp Asn Glu Gly Cys Pro Trp Glu Val Met Ile Leu Arg Tyr Thr Gly
                 85   90   95
Ala Gln Gln Ile Ala Ser Ser Tyr Pro Gln Thr Val Phe Ala Cys Met
                100   105   110
Gln Pro Leu Ala Leu Pro Leu Cys Gly Arg Lys Pro Ala Gln Gly His
         115   120   125
Thr Ala Gly Gln Gln Gln His Ser Trp Ser Gln Ile
     130   135   140

<210> 4447
<211> 951
<212> DNA
<213> Homo sapiens

<400> 4447
agatgtccaa agagcagcgg ctgcccaggc cttgtgcagc gggcagcgag cagcccaggg
60
agccaggccc cagacaccgc actcagggcc atggccgaca ggggcccgtg gagggtgggg
120
gtggtgggct atggccgcct cggacagtcc cttgtgtccc gccttctggc tcagggatca
180
gaactgggcc tagaacttgt ttttgtgtgg aaccgtgacc ctggacgaat ggcagggagt
240
gtgcccctg ccctgcagct cgaagacctc actacacttg aggaaaggca ccctgacctt
300
gtggtagaag tggcccatcc aaaaataatc catgaatctg gggtacaaat cctccgtcat
360
gcaaaccttc tgagccttcg tgtcaccatg ccacacacc ccgatggctt ccggcttgag
420

```
ggacccctgg ctgcagccca cagccctggg ccttgcactg tgctctacga aggccctgtc
480
cgtgggctct gcccctttgc cccgcgaaat tccaacacca tggcggcggc tgccctggct
540
gcccccagcc tgggcttcga tggggtgatt ggggtgctcg tggctgatac cagcctcacg
600
gacatgcacg tggtggatgt agagctgagc ggaccccggg gccccacggg ccgaagcttt
660
gctgtgcaca cccgcagaga gaaccctgcc gagccaggcg cggtcaccgg ctccgccacc
720
gtcacggcct tctggcggag cctcctggcc tgctgccagc tcccctccag gccggggatc
780
catctctgct gagaagcctc ctccctcccg agacaagatc atctgcctgg cctctcacca
840
ccaccatccc acccctgccc tgccccactt ccccagggtc tcccttctga ctcagtaaag
900
atcaccgctg cctccccccg caaaaaaaaa aaaaaaaaaa aaaaaaaaa a
951
```

```
<210> 4448
<211> 263
<212> PRT
<213> Homo sapiens
```

```
<400> 4448
Arg Cys Pro Lys Ser Ser Gly Cys Pro Gly Leu Val Gln Arg Ala Ala
1               5                   10                  15
Ser Ser Pro Gly Ser Gln Ala Pro Asp Thr Ala Leu Arg Ala Met Ala
            20                  25                  30
Asp Arg Gly Pro Trp Arg Val Gly Val Val Gly Tyr Gly Arg Leu Gly
            35                  40                  45
Gln Ser Leu Val Ser Arg Leu Leu Ala Gln Gly Ser Glu Leu Gly Leu
        50                  55                  60
Glu Leu Val Phe Val Trp Asn Arg Asp Pro Gly Arg Met Ala Gly Ser
65                  70                  75                  80
Val Pro Pro Ala Leu Gln Leu Glu Asp Leu Thr Thr Leu Glu Glu Arg
                85                  90                  95
His Pro Asp Leu Val Val Glu Val Ala His Pro Lys Ile Ile His Glu
                100                 105                 110
Ser Gly Val Gln Ile Leu Arg His Ala Asn Leu Leu Ser Leu Arg Val
                115                 120                 125
Thr Met Ala Thr His Pro Asp Gly Phe Arg Leu Glu Gly Pro Leu Ala
        130                 135                 140
Ala Ala His Ser Pro Gly Pro Cys Thr Val Leu Tyr Glu Gly Pro Val
145                 150                 155                 160
Arg Gly Leu Cys Pro Phe Ala Pro Arg Asn Ser Asn Thr Met Ala Ala
                165                 170                 175
Ala Ala Leu Ala Ala Pro Ser Leu Gly Phe Asp Gly Val Ile Gly Val
                180                 185                 190
Leu Val Ala Asp Thr Ser Leu Thr Asp Met His Val Val Asp Val Glu
                195                 200                 205
Leu Ser Gly Pro Arg Gly Pro Thr Gly Arg Ser Phe Ala Val His Thr
        210                 215                 220
Arg Arg Glu Asn Pro Ala Glu Pro Gly Ala Val Thr Gly Ser Ala Thr
```

3636

```
225                 230              235                   240
Val Thr Ala Phe Trp Arg Ser Leu Leu Ala Cys Cys Gln Leu Pro Ser
                245                250               255
Arg Pro Gly Ile His Leu Cys
                260
```

```
<210> 4449
<211> 1365
<212> DNA
<213> Homo sapiens
```

```
<400> 4449
ncaattgatg atatttatca ttgtgcccag tttctacaaa taaaagatgg gtggattatt
60
ttctcgatgg aggacaaaac ctccaactgt agaagttcta gaaagtatag ataaggaaat
120
tcaagcattg gaagaattta gggaaaaaaa tcagagatta caaaaattat gggttggaag
180
attaattctg tattcctcag ttctctatct gtttacatgc ttaattgtat atttgtggta
240
tcttcctgat gaatttacag caagacttgc catgacactc ccattttttg cttttccatt
300
gatcatctgg agcataagaa cagtaattat tttcttcttt tccaagagaa cagaaagaaa
360
taatgaagca ttggatgatt taaaatccca gaggaaaaaa atacttgaag aagtcatgga
420
aaaagaaact tacaagacgg ctaaattaat tcttgaaagg tttgatccgt actcaaagaa
480
agcaaaggag tgtgagccgc catctgctgg agcagctgta actgcaagac ctggacaaga
540
gattcgtcag cgaactgcag ctcaaagaaa cctttctcaa caccagcaag ccctaaccag
600
ggccctcctc cacaagttcc agtatctcct ggaccaccaa aggacagttc tgcccctggt
660
ggacccccag aaaggactgt tactccagcc ctatcatcaa atgtgttacc aagacatctt
720
ggatcccctg ctacttcagt gcctggaatg ggtcttcatc ctccaggtcc acctttagca
780
agacctattc tcccccgaga acgaggtgct ttggatagaa ttgttgaata tttggttggt
840
gatggtccac aaaacaggta tgcacttata tgtcagcagt gtttttctca taatggcatg
900
gctttgaagg aagaatttga atacattgct tttcgatgtg cctactgttt tttcttgaac
960
cctgcaagaa aaaccagacc tcaggctcca agacttcctg agtttagttt tgagaagagg
1020
caggtggtgg aaggttcaag ttcagttggt cccttgccat caggaagtgt gctttcatca
1080
gacaaccagt ttaatgaaga atctttagaa cacgatgttc ttgatgataa tacagagcag
1140
acagatgaca aaataccagc tacagaacag acaaaccaag tgattgaaaa agcatctgac
1200
tcagaggaac cagaggagaa acaagagact gagaatgagg aagcctcagt gattgaaacc
1260
```

```
aactccacag ttcctggagc tgattctatt cctgatcctg aactaagtgg agaatctttg
1320
acggcagagt agtaaatgct tccacgtgcc ttcaactgga aaaaa
1365
```

```
<210> 4450
<211> 194
<212> PRT
<213> Homo sapiens
```

```
<400> 4450
Met Gly Leu His Pro Pro Gly Pro Pro Leu Ala Arg Pro Ile Leu Pro
1               5                   10                  15
Arg Glu Arg Gly Ala Leu Asp Arg Ile Val Glu Tyr Leu Val Gly Asp
            20                  25                  30
Gly Pro Gln Asn Arg Tyr Ala Leu Ile Cys Gln Gln Cys Phe Ser His
        35                  40                  45
Asn Gly Met Ala Leu Lys Glu Glu Phe Glu Tyr Ile Ala Phe Arg Cys
    50                  55                  60
Ala Tyr Cys Phe Phe Leu Asn Pro Ala Arg Lys Thr Arg Pro Gln Ala
65                  70                  75                  80
Pro Arg Leu Pro Glu Phe Ser Phe Glu Lys Arg Gln Val Val Glu Gly
                85                  90                  95
Ser Ser Ser Val Gly Pro Leu Pro Ser Gly Ser Val Leu Ser Ser Asp
            100                 105                 110
Asn Gln Phe Asn Glu Glu Ser Leu Glu His Asp Val Leu Asp Asp Asn
        115                 120                 125
Thr Glu Gln Thr Asp Asp Lys Ile Pro Ala Thr Glu Gln Thr Asn Gln
    130                 135                 140
Val Ile Glu Lys Ala Ser Asp Ser Glu Glu Pro Glu Glu Lys Gln Glu
145                 150                 155                 160
Thr Glu Asn Glu Glu Ala Ser Val Ile Glu Thr Asn Ser Thr Val Pro
                165                 170                 175
Gly Ala Asp Ser Ile Pro Asp Pro Glu Leu Ser Gly Glu Ser Leu Thr
                180                 185                 190
Ala Glu
```

```
<210> 4451
<211> 1637
<212> DNA
<213> Homo sapiens
```

```
<400> 4451
nntcctggag gacccaggac tgaccaagtc cccggcctca gcaggcgatc atgttggcag
60
gcttggatct tctcgctctg tgaccagcct gggccacaca ctggtggaat ctgctctcac
120
gaggccttcc ctgcccagtc cccacaggac ctcacctagg gtggaggaga gcaacagcaa
180
gctcctggag tcagagagga agctgcagga ggagcgacac cgcaccgtgg tcttggagca
240
acatctggag aagatacgcc tggagccagg gaaggcatca gcctcccaga gagcagctcc
300
```

caggaccaaa acagctccgc tcctggatgt atgctgtgta cggggccttg gctgtgatgg
360
gcacaatggg cccttggtac ctgctgctgc tgcttggtca ctgtgtgggc ctctatgtgg
420
cctcgctttt gggccagccc tggctctgtc ttggccttgg cttggccagc ctggcctcct
480
tcaagatgga cccctaatc tcttggcaga gcgggtttgt aacaggcact tttgatcttc
540
aagaggtgct gtttcatggg ggcagcagct tcacagtgct gcgttgcacc agctttgcac
600
tggagagctg tgcccaccct gaccgccact nactccttag ctgacctgct caagtacaac
660
ttctacctgc ccttcttctt cttcgggccc atcatgacct ttgatcgctt ccatgctcag
720
gtgagccagg tggagccagt gagacgcgag ggtgagctgt ggcacatccg agcccaggca
780
ggcctaagcg tggtggccat catggccgtc gacatcttct ttcacttctt ctacatcctc
840
actatcccca gcgacctcaa gttcgccaac cgcctcccag acagtgccct cgctggccta
900
gcctattcaa acctggtgta tgactgggtg aaggcggccg tcctctttgg tgttgtcaac
960
actgtggcat gcctcgacca cctggaccca ccccagcctc ccaagtgcat caccgcactc
1020
tacgtctttg cggaaacgca ctttgaccgt ggcatcaacg actggctttg caaatatgtg
1080
tataaccaca ttggtgggga gcattccgct gtgatcccag agctggcagc cacagtggcc
1140
acatttgcca tcaccacact gtggcttggg ccttgtgaca ttgtctacct gtggtcattc
1200
cttaactgct ttggcctcaa ctttgagctc tggatgcaaa aactggcaga gtggggggccc
1260
ctagcacgaa ttgaggcctc tctgtcagtg cagatgtccc gtagggtccg ggccctgttt
1320
ggagccatga acttctgggc catcatcatg tacaaccttg tgagcctgaa cagcctcaaa
1380
ttcacagagc tggttgcccg gcgcctgcta ctcacagggt tcccccagac cacgctgtcc
1440
atcctgtttg tcacctactg tggcgtccag ctggtaaagg agcgtgagcg aaccttggca
1500
ctggaggagg agcagaagca ggacaaagag aagccggagt aggagggagc gggtagaggg
1560
atgggctctg ctcagctatt cttgggccag atggggcctg accgatagaa taaaagactt
1620
ttctacaaca aaaaaaa
1637

<210> 4452
<211> 328
<212> PRT
<213> Homo sapiens

<400> 4452
Met Gly Ala Ala Ala Ser Gln Cys Cys Val Ala Pro Ala Leu His Trp

```
    1                    5                    10                        15
Arg Ala Val Pro Thr Leu Thr Ala Thr Xaa Ser Leu Ala Asp Leu Leu
                 20                        25                    30
Lys Tyr Asn Phe Tyr Leu Pro Phe Phe Phe Phe Gly Pro Ile Met Thr
             35                    40                    45
Phe Asp Arg Phe His Ala Gln Val Ser Gln Val Glu Pro Val Arg Arg
         50                    55                    60
Glu Gly Glu Leu Trp His Ile Arg Ala Gln Ala Gly Leu Ser Val Val
65                    70                    75                    80
Ala Ile Met Ala Val Asp Ile Phe Phe His Phe Phe Tyr Ile Leu Thr
                 85                    90                    95
Ile Pro Ser Asp Leu Lys Phe Ala Asn Arg Leu Pro Asp Ser Ala Leu
                100                   105                   110
Ala Gly Leu Ala Tyr Ser Asn Leu Val Tyr Asp Trp Val Lys Ala Ala
             115                   120                   125
Val Leu Phe Gly Val Val Asn Thr Val Ala Cys Leu Asp His Leu Asp
             130                   135                   140
Pro Pro Gln Pro Pro Lys Cys Ile Thr Ala Leu Tyr Val Phe Ala Glu
145                   150                   155                   160
Thr His Phe Asp Arg Gly Ile Asn Asp Trp Leu Cys Lys Tyr Val Tyr
                 165                   170     .           175
Asn His Ile Gly Gly Glu His Ser Ala Val Ile Pro Glu Leu Ala Ala
                 180                   185                   190
Thr Val Ala Thr Phe Ala Ile Thr Thr Leu Trp Leu Gly Pro Cys Asp
             195                   200                   205
Ile Val Tyr Leu Trp Ser Phe Leu Asn Cys Phe Gly Leu Asn Phe Glu
         210                   215                   220
Leu Trp Met Gln Lys Leu Ala Glu Trp Gly Pro Leu Ala Arg Ile Glu
225                   230                   235                   240
Ala Ser Leu Ser Val Gln Met Ser Arg Arg Val Arg Ala Leu Phe Gly
                 245                   250                   255
Ala Met Asn Phe Trp Ala Ile Ile Met Tyr Asn Leu Val Ser Leu Asn
             260                   265                   270
Ser Leu Lys Phe Thr Glu Leu Val Ala Arg Arg Leu Leu Leu Thr Gly
             275                   280                   285
Phe Pro Gln Thr Thr Leu Ser Ile Leu Phe Val Thr Tyr Cys Gly Val
         290                   295                   300
Gln Leu Val Lys Glu Arg Glu Arg Thr Leu Ala Leu Glu Glu Glu Gln
305                   310                   315                   320
Lys Gln Asp Lys Glu Lys Pro Glu
                 325
```

<210> 4453
<211> 685
<212> DNA
<213> Homo sapiens

<400> 4453
tttttttttt tttttttttt tttttttttt ttttccagt gtggaaactt actttattcc
60
agccatgatt atcctagttg tcaccttgca cacctgccat ccggtgccat ctcctggctg
120
gcacatctat acccactctg gctctgaaag gcttgtcaac caaaaatggg cagctggggc
180

```
taaggcatat ttaaacaaag gctccaaagg accccttttca cttgggtcta gcatccagcc
240
tctctctcag caaaggcagg attgtggtcc cttgtgtttt ctgaacaggg cccagggcag
300
ccaaggcatg ccatcactgc agcactcaac cctctggtca cagtggagtc gccggtccag
360
cctgaaatat tactacagag gagaaagacc cattcttgct atgttgctct atcttccacg
420
tccaaaaaca gtcctatgta gcttcagctg ctccgaaatc aggtcacaga acagcaggag
480
acattccttt ggcaaaaaag gacacgcttt tgtcctgtat cttatactgg taagtgaagc
540
tctgatcccg gtggactgcg ggctgcgatg gtctcctcca caggatcctc agctacagag
600
acagagaaga atgaaagagg agcagccacc ccaggacctg ctccactggg aaccccaccc
660
taccttctct gtgcccttca cgcgt
685
```

```
<210> 4454
<211> 207
<212> PRT
<213> Homo sapiens
```

```
<400> 4454
Met Ile Ile Leu Val Val Thr Leu His Thr Cys His Pro Val Pro Ser
1               5                  10                 15
Pro Gly Trp His Ile Tyr Thr His Ser Gly Ser Glu Arg Leu Val Asn
            20                 25                 30
Gln Lys Trp Ala Ala Gly Ala Lys Ala Tyr Leu Asn Lys Gly Ser Lys
            35                 40                 45
Gly Pro Leu Ser Leu Gly Ser Ser Ile Gln Pro Leu Ser Gln Gln Arg
        50                 55                 60
Gln Asp Cys Gly Pro Leu Cys Phe Leu Asn Arg Ala Gln Gly Ser Gln
65                 70                 75                 80
Gly Met Pro Ser Leu Gln His Ser Thr Leu Trp Ser Gln Trp Ser Arg
                85                 90                 95
Arg Ser Ser Leu Lys Tyr Tyr Tyr Arg Gly Glu Arg Pro Ile Leu Ala
            100                105                110
Met Leu Leu Tyr Leu Pro Arg Pro Lys Thr Val Leu Cys Ser Phe Ser
            115                120                125
Cys Ser Glu Ile Arg Ser Gln Asn Ser Arg Arg His Ser Phe Gly Lys
        130                135                140
Lys Gly His Ala Phe Val Leu Tyr Leu Ile Leu Val Ser Glu Ala Leu
145                150                155                160
Ile Pro Val Asp Cys Gly Leu Arg Trp Ser Pro Pro Gln Asp Pro Gln
                165                170                175
Leu Gln Arg Gln Arg Arg Met Lys Glu Glu Gln Pro Pro Gln Asp Leu
            180                185                190
Leu His Trp Glu Pro His Pro Thr Phe Ser Val Pro Phe Thr Arg
            195                200                205
```

```
<210> 4455
<211> 882
```

<212> DNA
<213> Homo sapiens

<400> 4455
nacgcgtgcc tcagtaccaa cgggctcggc agcagcccgg gcagtgccgg gcacatgaac
60
ggattaagcc acagcccggg gaacccgtcg accattccca tgaaggacca cgatgccatc
120
aagctgttca ttgggcagat cccccgcaac ctggatgaga aggacctcaa gcccctcttc
180
gaggagtttg gcaaaatcta cgagcttacg gttctgaagg acaggttcac aggcatgcac
240
aaaggctgcg ccttcctcac ctactgcgag cgtgagtcag cgctgaaggc ccagagcgcg
300
ctgcacgagc agaagactct gcccgggatg aaccggccga tccaggtgaa gcctgcggac
360
agcgagagcc gaggagatag tagctgcctg cgccagcccc cttcacatag aaaactcttc
420
gtgggcatgc tcaacaagca acagtccgag gacgacgtgc gccgcctttt cgaggccttt
480
gggaacatcg aggagtgcac catcctgcgc gggcccgacg gcaacagcaa ggggtgcgcc
540
tttgtgaagt actcctccca cgccgaggcg caggccgcca tcaacgcgct acacggcagc
600
cagaccatgc cgggagcctc gtccagtctg gtggtcaagt cgccgacac cgacaaggag
660
cgcacgatgc ggcgaatgca gcagatggct ggccagatgg gcatgttcaa ccccatggcc
720
atcccttttcg gggcctacgg cgcctacgct caggcactga tgcagcagca agcggccctg
780
atggcatcag tcgcgcaggg cggctacctg aaccccatgg ctgccttcgc tgccgcccag
840
atgcagcaga tggcggccct caacatgaat ggcctggcgg cc
882

<210> 4456
<211> 261
<212> PRT
<213> Homo sapiens

<400> 4456

```
Met Lys Asp His Asp Ala Ile Lys Leu Phe Ile Gly Gln Ile Pro Arg
 1               5                   10                  15
Asn Leu Asp Glu Lys Asp Leu Lys Pro Leu Phe Glu Glu Phe Gly Lys
            20                  25                  30
Ile Tyr Glu Leu Thr Val Leu Lys Asp Arg Phe Thr Gly Met His Lys
        35                  40                  45
Gly Cys Ala Phe Leu Thr Tyr Cys Glu Arg Glu Ser Ala Leu Lys Ala
    50                  55                  60
Gln Ser Ala Leu His Glu Gln Lys Thr Leu Pro Gly Met Asn Arg Pro
65                  70                  75                  80
Ile Gln Val Lys Pro Ala Asp Ser Glu Ser Arg Gly Asp Ser Ser Cys
                85                  90                  95
Leu Arg Gln Pro Pro Ser His Arg Lys Leu Phe Val Gly Met Leu Asn
```

```
                  100                    105                    110
      Lys Gln Gln Ser Glu Asp Asp Val Arg Arg Leu Phe Glu Ala Phe Gly
              115                    120                    125
      Asn Ile Glu Glu Cys Thr Ile Leu Arg Gly Pro Asp Gly Asn Ser Lys
              130                    135                    140
      Gly Cys Ala Phe Val Lys Tyr Ser Ser His Ala Glu Ala Gln Ala Ala
      145                    150                    155                    160
      Ile Asn Ala Leu His Gly Ser Gln Thr Met Pro Gly Ala Ser Ser Ser
                  165                    170                    175
      Leu Val Val Lys Phe Ala Asp Thr Asp Lys Glu Arg Thr Met Arg Arg
              180                    185                    190
      Met Gln Gln Met Ala Gly Gln Met Gly Met Phe Asn Pro Met Ala Ile
              195                    200                    205
      Pro Phe Gly Ala Tyr Gly Ala Tyr Ala Gln Ala Leu Met Gln Gln Gln
          210                    215                    220
      Ala Ala Leu Met Ala Ser Val Ala Gln Gly Gly Tyr Leu Asn Pro Met
      225                    230                    235                    240
      Ala Ala Phe Ala Ala Ala Gln Met Gln Gln Met Ala Ala Leu Asn Met
                  245                    250                    255
      Asn Gly Leu Ala Ala
              260
```

```
<210> 4457
<211> 1491
<212> DNA
<213> Homo sapiens

<400> 4457
nggctggcag gtgcacatca gcttaaagct gatgcaacag tcctctctct acgcatccaa
60
tgagaccatg ctgaccctct tctacgaaga cagcaaactg taccaggtgc ccggtggagc
120
tatgcgggga catcggggca ccccaggagg gctgacccca gctcacctgg ccctgccttc
180
cccctgcagc tggtgtacct tatgaacaac cagaagggcc agctggtcaa gaggctcgtg ·
240
cccgtggagc agcttctgat gtatcaacag cacaccagcc actatgactt ggagcggaaa
300
gggggctact tgatgctctc cttcatcgac ttctgcccct tctcggtgat gcgcctgcgg
360
agcctgccca gtccgcagag atacacgcgc caggagcgct accgggcgcg gccgccgcgc
420
gtcctggagc gctcgggctt ccacaacgag aactcgctcg ccatctacca gggcctggtc
480
tactacctgc tgtggctgca ctccgtgtac gacaaggatt actacttctt cttggcgagc
540
aattggcgaa gcgcgggcgg cgtgtccata gaaatggaca gctacgaaaa gatctacaac
600
ctcgagtccg cgtacgagct gccggagcgc attttcctgg acaagggcac tgagtacagc
660
ttcgccatct tcctgtcggc gcagggccac tcgttccgga cgcagtcaga actcggtctg
720
cgcgggacca gagtggagcc cgaagggcgg ggcgagggct accagaatct gggagcctgg
780
```

ggggcgggga caccatcgga ggggcggggc ctgtctgtgg acgtgggcgt ggtgctggcc
840
gaccccggct gcatcgaggc ctcggtgaag caggaggtcc tgattaatcg caactcggtg
900
ctattttcga ttacgctcaa ggataaaaag ctttgctatg accaaggcat tagtggacat
960
caccttatgg agacttccat gacggtcaat gtgaggtcca agcctggagg ggagggcaag
1020
cgcctggcct tcgacatcac ctacacgctg gaatacagcc gcctgaagaa caaacactac
1080
tttgactgcg ttaacgtgaa cccggagatg ccctgctttc tcttccggga cagtgtctat
1140
gttctgctgg tggtgggtgg cgggcccaca ctggacagcc tcaaggacta cagtgaggac
1200
gaaatctacc gcttcaacag ccccctggac aagaccaaca gccttatctg gaccacgagg
1260
accacaagga ccaccaaaga ctcagccttt cacatcatgt cccacgagag cccaggcatc
1320
gagtggctct gtctggagaa tgccccatgc tatgacaatg ttccccaagg catctttgcc
1380
cctgaattct tcttcaaggt gttggtgagc aataggtgag ccaggcaagt ggcccaggtg
1440
cgggtcaggg gctgcccatg gaatgcctgg cttctcctct aatcctggat c
1491

<210> 4458
<211> 405
<212> PRT
<213> Homo sapiens

<400> 4458
Met Asn Asn Gln Lys Gly Gln Leu Val Lys Arg Leu Val Pro Val Glu
1   5   10   15
Gln Leu Leu Met Tyr Gln Gln His Thr Ser His Tyr Asp Leu Glu Arg
            20   25   30
Lys Gly Gly Tyr Leu Met Leu Ser Phe Ile Asp Phe Cys Pro Phe Ser
        35   40   45
Val Met Arg Leu Arg Ser Leu Pro Ser Pro Gln Arg Tyr Thr Arg Gln
    50   55   60
Glu Arg Tyr Arg Ala Arg Pro Pro Arg Val Leu Glu Arg Ser Gly Phe
65   70   75   80
His Asn Glu Asn Ser Leu Ala Ile Tyr Gln Gly Leu Val Tyr Tyr Leu
                85   90   95
Leu Trp Leu His Ser Val Tyr Asp Lys Asp Tyr Tyr Phe Phe Leu Ala
            100   105   110
Ser Asn Trp Arg Ser Ala Gly Gly Val Ser Ile Glu Met Asp Ser Tyr
        115   120   125
Glu Lys Ile Tyr Asn Leu Glu Ser Ala Tyr Glu Leu Pro Glu Arg Ile
        130   135   140
Phe Leu Asp Lys Gly Thr Glu Tyr Ser Phe Ala Ile Phe Leu Ser Ala
145   150   155   160
Gln Gly His Ser Phe Arg Thr Gln Ser Glu Leu Gly Leu Arg Gly Thr
                165   170   175
Arg Val Glu Pro Glu Gly Arg Gly Glu Gly Tyr Gln Asn Leu Gly Ala

3644

```
                  180                    185                    190
    Trp Gly Ala Gly Thr Pro Ser Glu Gly Arg Gly Leu Ser Val Asp Val
              195                    200                    205
    Gly Val Val Leu Ala Asp Pro Gly Cys Ile Glu Ala Ser Val Lys Gln
          210                    215                    220
    Glu Val Leu Ile Asn Arg Asn Ser Val Leu Phe Ser Ile Thr Leu Lys
    225                    230                    235                    240
    Asp Lys Lys Leu Cys Tyr Asp Gln Gly Ile Ser Gly His His Leu Met
                  245                    250                    255
    Glu Thr Ser Met Thr Val Asn Val Arg Ser Lys Pro Gly Gly Glu Gly
                  260                    265                    270
    Lys Arg Leu Ala Phe Asp Ile Thr Tyr Thr Leu Glu Tyr Ser Arg Leu
              275                    280                    285
    Lys Asn Lys His Tyr Phe Asp Cys Val Asn Val Asn Pro Glu Met Pro
          290                    295                    300
    Cys Phe Leu Phe Arg Asp Ser Val Tyr Val Leu Leu Val Val Gly Gly
    305                    310                    315                    320
    Gly Pro Thr Leu Asp Ser Leu Lys Asp Tyr Ser Glu Asp Glu Ile Tyr
                  325                    330                    335
    Arg Phe Asn Ser Pro Leu Asp Lys Thr Asn Ser Leu Ile Trp Thr Thr
              340                    345                    350
    Arg Thr Thr Arg Thr Thr Lys Asp Ser Ala Phe His Ile Met Ser His
              355                    360                    365
    Glu Ser Pro Gly Ile Glu Trp Leu Cys Leu Glu Asn Ala Pro Cys Tyr
          370                    375                    380
    Asp Asn Val Pro Gln Gly Ile Phe Ala Pro Glu Phe Phe Phe Lys Val
    385                    390                    395                    400
    Leu Val Ser Asn Arg
              405
```

```
<210> 4459
<211> 1114
<212> DNA
<213> Homo sapiens

<400> 4459
cggggccacg ctgttccaca ggcacgctga gcggcttgaa gacccttccc agctccagag
60
aaggcaacac cgagggaggc ccagcaccac agtccatggc agacacatgg ttcagacttg
120
gccgattgat ctaagaaact ttattgctca gaaccttccc tccctgggca atggaaagag
180
ctttggagac cagcccatgg ggacagagtc agaggcactg ggtgtaaaaa aagagcgagc
240
gtgtggcaca tttggtccat tgtcatgtgt gggtatggca ggaggagggg gtaatctaga
300
agccccacat ctagggcctt ctagggaccc agatatgccc ccttaggcaa ggctcacatg
360
ccaaagcaaa gcagatgagg tcagcctggc ttgggttgag ggctcagtgc ctcttagcct
420
tgccctgggg ttcttggacc ttccggaaac tgagccacat caggctcacg ttgatagcat
480
aggtggtgat acaaacaatg cagaaatcat agagcacgaa gaacaggatc caggccaggt
540
```

3645

agacagaacc agcgagagac accagggagc tcagcagcat caggacagag gcccagcgtg
600
tccgcaggca acctaacaat agctgtagtg tgtagaagat gcaaccgaat atgctgttgg
660
attgattgag gatgctgtcc tgtcccagca catgctccac cagcccgaaa cccctgcccc
720
acctggagga gaagacgcgc gaacagctga tggcggtgcc cacgtcgcag agcgcgcggt
780
aatcccggtc ccgggcgcgc gccgccttca cgtgcagcgc gtagagcgag agcactaagc
840
ccgtcaggca aagagcgagc cgcacccagc cagggctccc ccaggtgctg cccattatct
900
ccaggttccg cccgaggcgc ccgcggagaa aaccagccac ggagcagggg ccgggcggcg
960
aatggccgcg cccctcctgg ccctctgact cggcgattgg ccggccgtgc tcgcactcca
1020
cgacccaaat ggctgttcca gggcgctagt caagcgggcg agttaggaaa acagcgaaga
1080
atgccgggac tagtgaagcg ggtaagggac gtgc
1114

<210> 4460
<211> 121
<212> PRT
<213> Homo sapiens

<400> 4460
Trp Arg Cys Pro Arg Arg Arg Ala Arg Gly Asn Pro Gly Pro Gly Arg
 1   5   10   15
Ala Pro Pro Ser Arg Ala Ala Arg Arg Ala Arg Ala Leu Ser Pro Ser
            20   25   30
Gly Lys Glu Arg Ala Ala Pro Ser Gln Gly Ser Pro Arg Cys Cys Pro
        35   40   45
Leu Ser Pro Gly Ser Ala Arg Gly Ala Arg Gly Glu Asn Gln Pro Arg
    50   55   60
Ser Arg Gly Arg Ala Ala Asn Gly Arg Ala Pro Pro Gly Pro Leu Thr
65   70   75   80
Arg Arg Leu Ala Gly Arg Ala Arg Thr Pro Arg Pro Lys Trp Leu Phe
                85   90   95
Gln Gly Ala Ser Gln Ala Gly Glu Leu Gly Lys Gln Arg Arg Met Pro
            100   105   110
Gly Leu Val Lys Arg Val Arg Asp Val
        115   120

<210> 4461
<211> 488
<212> DNA
<213> Homo sapiens

<400> 4461
acagagtcct acaccagcac tgcaatggcc cccaagggca tcttctgtaa cccgtacaac
60
aatctgatct tcatctgggg caacttcctc ctgcagagct ctaacaagga aaacttcatc
120

3646

tacctggcag acttccccaa ggaactgtcc atcaaataca tggccagatc gttccgtggg
180
gctgtggcta ttgtcacaga gacggaggag gtgggctgcc ccgcccttct ccccattccc
240
tctctgccca ccccccaaacc ccagggggccc ctctttcccc cgtcacagta aaggagccaa
300
gggaagggggg caccctcggg gaccctgaga aagggcagtg aagctccatt tataactgaa
360
actcctggaa ctcagggtaa gtgtcagctc caaagtcacg cagaccggag ctatgatccg
420
atgttcagag gcggccctct ttcatcccac agtgtggtcg ttcacttcat aaatattgag
480
catttaaa
488

<210> 4462
<211> 96
<212> PRT
<213> Homo sapiens

<400> 4462
Thr Glu Ser Tyr Thr Ser Thr Ala Met Ala Pro Lys Gly Ile Phe Cys
1   5   10   15
Asn Pro Tyr Asn Asn Leu Ile Phe Ile Trp Gly Asn Phe Leu Leu Gln
            20   25   30
Ser Ser Asn Lys Glu Asn Phe Ile Tyr Leu Ala Asp Phe Pro Lys Glu
        35   40   45
Leu Ser Ile Lys Tyr Met Ala Arg Ser Phe Arg Gly Ala Val Ala Ile
    50   55   60
Val Thr Glu Thr Glu Glu Val Gly Cys Pro Ala Leu Leu Pro Ile Pro
65   70   75   80
Ser Leu Pro Thr Pro Lys Pro Gln Gly Pro Leu Phe Pro Pro Ser Gln
                85   90   95

<210> 4463
<211> 2662
<212> DNA
<213> Homo sapiens

<400> 4463
nnccacctcc ctctcatggc tagtaggaga gactggtgct tgccccgccc ggtggactaa
60
ctcgcttaat tttaaataaa aagtcgagga cacggcggtc gttttcccga agacatgggc
120
cctcccatgg gccatttgct ccctggaggc cctcgcgtct tgctgagccc ggggagttag
180
gatgacgcga gcggtgaggg aacccggaac aattccttca cagaacaatt gaggcgaggc
240
ctttgggagt actttgtggg acggaccctg gcgggccctg ccagacgcac agggatggcg
300
gcggaggcgg ccgatttggg gctggggggcc gccgtccccg tggagctgag gcgggagcga
360
cgcatggtgt gcgtggagta cccgggagtg gtgcgtgatg tggctaagat gctgccgact
420

```
ctgggcggtg aggaaggcgt ctcccggatc tacgcagacc ccaccaagag gctggagctg
480
tacttccggc ccaaggaccc atactgccac ccagtgtgcg ccaaccgctt cagtaccagc
540
agcctgctgc tccgcatcag gaagagaacg aggcggcaga aaggggtgct gggcactgag
600
gcccactccg aggtcacatt tgacatggag atccttggca tcatctccac catttacaaa
660
tttcagggga tgtctgactt ccagtacttg gctgtgcata cggaagcagg cggcaagcat
720
acgtcaatgt atgacaaggt gctcatgctc cggcccgaga aggaggcctt tttccaccag
780
gagctgccgc tctacatccc cccacccatc ttctcccggc tggacgcccc ggtggactac
840
ttctaccgac cagagaccca gcaccgggaa ggctacaaca atcccccat ctcaggtgag
900
aatctgattg gcctgagcag agcccggcgc ccccacaatg ccatctttgt caactttgag
960
gatgaggagg tgcccaagca gccactggag gctgcagccc agacgtggag gagagtctgc
1020
actaaccccg tggaccggaa ggtggaggag gagctgagga agctgtttga catccgtccc
1080
atctggtccc gaaatgctgt caaggccaac atcagcgtcc acccagacaa gctcaaggtc
1140
ttgcttccct tcatagccta ttacatgata acaggcccct ggcgcagcct atggattcga
1200
tttgggtatg accccgaaa aaacccagat gccaagattt atcaagtcct cgatttccga
1260
atccgttgtg gaatgaaaca cggttacgcc cccagtgact tgccggtcaa agcaaagcgc
1320
agcacctaca actacagcct ccccatcacc gtcaagaaga catccagcca gcttgtcacc
1380
atgcatgacc tgaagcaggg cctgggccgg tcggggacga gtggtgctcg gaaaccagct
1440
tccagcaagt acaagctcaa ggactctgtc tacatcttcc gggaaggggc cttgccaccc
1500
tatcggcaga tgttctacca gttatgcgac ttgaatgtgg aagagttgca gaagatcatt
1560
caccgcaatg acgggcagaa gaattcctgc acagaacggg atgggtggtg cctccccaag
1620
accagcgacg agctcaggga caccatgtcc ctcatgatcc ggcagaccat ccgctccaag
1680
aggcctgctc tcttttccag ctcagccaag gctgatggcg aaaagagca gctgacgtac
1740
gagtctgggg aagacgagga ggatgaggag gaggaggaag aggaggagga ggacttcaag
1800
ccatccgacg gcagtgaaaa cgaaatggag acagagattc tggactacgt gtgacagggc
1860
ccaaggctgg gcctccctga cccggccaga ctggtgtctg gcctaatgag ggagccgggg
1920
ctccccattg ccacccacag tgcccggaat ggccctagga ggccctctga ggagagctag
1980
agtcccagca aagggtgcag ctgaccctag cactggctgt gacatgctgc ttggtgctgc
2040
```

3648

```
ctctggtcct gaggggttag ggacatcccc aaagggtata ccctggctct gccacccatg
2100
aaccagccca gcatccagcc agtgagtggg cacccaatgc ctctcaggat gagaccagta
2160
aatgccggag gtggagctgg gcagctgtgg agccccaggc cacaggccag tctcgcttgg
2220
ctctcatgac tgtggtggtg gagatagcgt ggggagcctc gcccatggtc tcacgtggca
2280
agaagtgcct ttagctctgg atcccaaccg tttggcacag ctttggccac agccaggccc
2340
ctctggaatt gtccttatta aaccagtttc ccgagaagtc ttggtttctt ggtgtgaatg
2400
ttggcgctgc aggggagtct tcttattgcc ttggggcttg gccccctttt gtcccttcat
2460
atattccttc attcattcct tcattcattc agtgacatgc tggcagtgct ggcctgtgcc
2520
cccctcacat gtggtcgggt tgggtgaggg cagctaggaa gactccaggg gctgggtcag
2580
ttcttctcta aatgaatacc cttctgacga agtcatggga gacggggcct gctgtcctgt
2640
gggctgccag tgtgaaacta gt
2662
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```
<210> 4464
<211> 519
<212> PRT
<213> Homo sapiens

<400> 4464
Met Ala Ala Glu Ala Ala Asp Leu Gly Leu Gly Ala Ala Val Pro Val
1               5                   10                  15
Glu Leu Arg Arg Glu Arg Arg Met Val Cys Val Glu Tyr Pro Gly Val
            20                  25                  30
Val Arg Asp Val Ala Lys Met Leu Pro Thr Leu Gly Gly Glu Glu Gly
        35                  40                  45
Val Ser Arg Ile Tyr Ala Asp Pro Thr Lys Arg Leu Glu Leu Tyr Phe
    50                  55                  60
Arg Pro Lys Asp Pro Tyr Cys His Pro Val Cys Ala Asn Arg Phe Ser
65                  70                  75                  80
Thr Ser Ser Leu Leu Leu Arg Ile Arg Lys Arg Thr Arg Arg Gln Lys
                85                  90                  95
Gly Val Leu Gly Thr Glu Ala His Ser Glu Val Thr Phe Asp Met Glu
            100                 105                 110
Ile Leu Gly Ile Ile Ser Thr Ile Tyr Lys Phe Gln Gly Met Ser Asp
        115                 120                 125
Phe Gln Tyr Leu Ala Val His Thr Glu Ala Gly Gly Lys His Thr Ser
    130                 135                 140
Met Tyr Asp Lys Val Leu Met Leu Arg Pro Glu Lys Glu Ala Phe Phe
145                 150                 155                 160
His Gln Glu Leu Pro Leu Tyr Ile Pro Pro Ile Phe Ser Arg Leu
                165                 170                 175
Asp Ala Pro Val Asp Tyr Phe Tyr Arg Pro Glu Thr Gln His Arg Glu
            180                 185                 190
Gly Tyr Asn Asn Pro Pro Ile Ser Gly Glu Asn Leu Ile Gly Leu Ser
```

3649

```
            195                    200                    205
      Arg Ala Arg Arg Pro His Asn Ala Ile Phe Val Asn Phe Glu Asp Glu
            210                    215                    220
      Glu Val Pro Lys Gln Pro Leu Glu Ala Ala Ala Gln Thr Trp Arg Arg
      225                    230                    235                    240
      Val Cys Thr Asn Pro Val Asp Arg Lys Val Glu Glu Glu Leu Arg Lys
                      245                    250                    255
      Leu Phe Asp Ile Arg Pro Ile Trp Ser Arg Asn Ala Val Lys Ala Asn
                      260                    265                    270
      Ile Ser Val His Pro Asp Lys Leu Lys Val Leu Leu Pro Phe Ile Ala
                      275                    280                    285
      Tyr Tyr Met Ile Thr Gly Pro Trp Arg Ser Leu Trp Ile Arg Phe Gly
            290                    295                    300
      Tyr Asp Pro Arg Lys Asn Pro Asp Ala Lys Ile Tyr Gln Val Leu Asp
      305                    310                    315                    320
      Phe Arg Ile Arg Cys Gly Met Lys His Gly Tyr Ala Pro Ser Asp Leu
                      325                    330                    335
      Pro Val Lys Ala Lys Arg Ser Thr Tyr Asn Tyr Ser Leu Pro Ile Thr
                      340                    345                    350
      Val Lys Lys Thr Ser Ser Gln Leu Val Thr Met His Asp Leu Lys Gln
            355                    360                    365
      Gly Leu Gly Arg Ser Gly Thr Ser Gly Ala Arg Lys Pro Ala Ser Ser
            370                    375                    380
      Lys Tyr Lys Leu Lys Asp Ser Val Tyr Ile Phe Arg Glu Gly Ala Leu
      385                    390                    395                    400
      Pro Pro Tyr Arg Gln Met Phe Tyr Gln Leu Cys Asp Leu Asn Val Glu
                      405                    410                    415
      Glu Leu Gln Lys Ile Ile His Arg Asn Asp Gly Ala Glu Asn Ser Cys
                      420                    425                    430
      Thr Glu Arg Asp Gly Trp Cys Leu Pro Lys Thr Ser Asp Glu Leu Arg
            435                    440                    445
      Asp Thr Met Ser Leu Met Ile Arg Gln Thr Ile Arg Ser Lys Arg Pro
      450                    455                    460
      Ala Leu Phe Ser Ser Ser Ala Lys Ala Asp Gly Gly Lys Glu Gln Leu
      465                    470                    475                    480
      Thr Tyr Glu Ser Gly Glu Asp Glu Glu Asp Glu Glu Glu Glu Glu Glu
                      485                    490                    495
      Glu Glu Glu Asp Phe Lys Pro Ser Asp Gly Ser Glu Asn Glu Met Glu
                      500                    505                    510
      Thr Glu Ile Leu Asp Tyr Val
            515
```

<210> 4465
<211> 1291
<212> DNA
<213> Homo sapiens

<400> 4465
gggctggagc gccaggttcg ggccgagatc gagcacaaga aggaggagct gcggcagatg
60
gtgggcgaac ggtaccgcga cctgatcgag gcgnccgaca ccatcggcca gatgcgccgt
120
ngcgccgtgg ggctagtgga cgccgtgaag gccaccgacc agtactgcgc ccgcctccgc
180

```
caggccggct cggccgcgcc ccggccaccg cgggcccagc agccacagca gccatcccaa
240
gagaagttct acagcatggc tgccagatca agctactctt agaaattccg gagaagatct
300
ggagctcgat ggaagcctct cagtgtctcc acgccacacn agctctacct gctctgctgc
360
cacctccaca gcctgctcca gctggattct tctagttccc gatacagtcc cgtcctctcc
420
cggtttccta tactcatccg gcaggtggcg gccgccagcc acttccggtc aactattctg
480
catgaaagca agatgttgct caaatgccaa ggtgtgtctg accaagctgt ggccgaggcc
540
ctgtgctcta taatgctctt agaagagagt tctcctcgcc aagccctcac agacttcctg
600
ctggccagaa aggcaactat tcagaaactt ctcaaccagc cacaccatgg tgctggtatc
660
aaggctcaga tttgctcatt agtggagttg ctggccacca ctctgaagca agctcatgcc
720
cttttctaca ctttgccaga aggactgctg ccagatccag ccctgccatg tggcttgctc
780
ttctctactc tggagaccat cacaggccag catcctgccg aaagggcac tggtgtcctg
840
caggaagaga tgaaactctg cagctggttt aaacacctgc agcatccat cgtcgagttc
900
cagccaacac tccgaaccct tgcacatccc atcagtcagg aatacctgaa agacacgctg
960
cagaaatgga tccacatgtg taatgaagac attaaaaatg ggatcaccaa cctgctcatg
1020
tacgtgaaga gcatgaaggg tctcgcggga atccgggacg ccatgtggga gttacttacc
1080
agtgagtcca ccaatcacag ctgggatgtg ctatgtaccc gcnttctgga gaagccgctc
1140
ttgttctggg aagatatgat gcagcaactg ttccttgacc gattacagac tctgacaaaa
1200
gaaggctttg actccatctc cagtagtncc aaggagctct tggtttcang tttgcaggaa
1260
cttgaaagca gcaccagcaa ctcccacttc a
1291
```

```
<210> 4466
<211> 93
<212> PRT
<213> Homo sapiens
```

```
<400> 4466
Gly Leu Glu Arg Gln Val Arg Ala Glu Ile Glu His Lys Lys Glu Glu
1               5                   10                  15
Leu Arg Gln Met Val Gly Glu Arg Tyr Arg Asp Leu Ile Glu Ala Xaa
            20                  25                  30
Asp Thr Ile Gly Gln Met Arg Arg Xaa Ala Val Gly Leu Val Asp Ala
            35                  40                  45
Val Lys Ala Thr Asp Gln Tyr Cys Ala Arg Leu Arg Gln Ala Gly Ser
        50                  55                  60
Ala Ala Pro Arg Pro Pro Arg Ala Gln Gln Pro Gln Gln Pro Ser Gln
```

65   70   75   80
Glu Lys Phe Tyr Ser Met Ala Ala Arg Ser Ser Tyr Ser
                  85   90

<210> 4467
<211> 1142
<212> DNA
<213> Homo sapiens

<400> 4467
nnagatgtcc ctaaggtaga ggtgttggaa cgggagctgg cctggctgaa ggagcatctg
60
tcccagctgg agtcccctgt ggtgttttgt cacaatgacc tgctctgcaa gaatatcatc
120
tatgacagca tcaaaggtca cgtgcggttc attgactatg aatatgctgg ctacaactac
180
caagcttttg acattggcaa ccatttcaat gagtttgcag gcgtgaatga ggtggattac
240
tgcctgtacc cggcgcggga gacccagctg cagtggctgc actactacct gcaggcacaa
300
aaggggatgg ccgtgacccc cagggaggtg caaaggctct acgtgcaagt caacaagttt
360
gccctggcgt ctcacttctt ctgggctctc tgggccctca tccagaacca gtactccacc
420
atcgactttg atttcctcag gtacgcagtg atccgattca accagtactt caaggtgaag
480
cctcaagcgt cagccttgga gatgccaaag tgaccagcca ccccatccct cccctaccca
540
tctgtctggc cagacctgtt ctccagagct caattctgca ctctgggatc cacacccttg
600
gacagggtgg gagaggggac acatgggtgt ccagggagaa ggctctgtcc ctgccgccag
660
accccagtgg ttgccactga agacctcatt ctcctgtctg gaggggctga taggacccc
720
ttccgggggt cccttcacc ccaccaggct tgggaggaag tgcctgcagc caggtcctga
780
accataacca cccctgggaa acacatcatt cccagcctca ggccctgctg gaattggggc
840
tgccttatat gtgtgtttac cccttcctgg cctggggaag gaggcgggga gggctccttt
900
ctacctccag tgccctgagc ctccagtccg tctccccctg catgccccat gtgggaggtg
960
ctgagctcca aaccagcatc acaccaactc tgacacatgg atgtacctat cttggtgatg
1020
ggtgggggcc aagaattgag catgacatct tccccagcag ccacctcctc tgagatccct
1080
caccttctcc aaaccagatc caatcaaacc tcagcccgag gaaacatgct cccctcacgc
1140
gt
1142

<210> 4468
<211> 170
<212> PRT

<213> Homo sapiens

<400> 4468
```
Xaa Asp Val Pro Lys Val Glu Val Leu Glu Arg Glu Leu Ala Trp Leu
 1               5                  10                  15
Lys Glu His Leu Ser Gln Leu Glu Ser Pro Val Val Phe Cys His Asn
            20                  25                  30
Asp Leu Leu Cys Lys Asn Ile Ile Tyr Asp Ser Ile Lys Gly His Val
        35                  40                  45
Arg Phe Ile Asp Tyr Glu Tyr Ala Gly Tyr Asn Tyr Gln Ala Phe Asp
    50                  55                  60
Ile Gly Asn His Phe Asn Glu Phe Ala Gly Val Asn Glu Val Asp Tyr
65                  70                  75                  80
Cys Leu Tyr Pro Ala Arg Glu Thr Gln Leu Gln Trp Leu His Tyr Tyr
                85                  90                  95
Leu Gln Ala Gln Lys Gly Met Ala Val Thr Pro Arg Glu Val Gln Arg
            100                 105                 110
Leu Tyr Val Gln Val Asn Lys Phe Ala Leu Ala Ser His Phe Phe Trp
        115                 120                 125
Ala Leu Trp Ala Leu Ile Gln Asn Gln Tyr Ser Thr Ile Asp Phe Asp
    130                 135                 140
Phe Leu Arg Tyr Ala Val Ile Arg Phe Asn Gln Tyr Phe Lys Val Lys
145                 150                 155                 160
Pro Gln Ala Ser Ala Leu Glu Met Pro Lys
                165                 170
```

<210> 4469
<211> 409
<212> DNA
<213> Homo sapiens

<400> 4469
```
atctatgatg cacaacatgc caatttggct ggcacgctga gcggccatgc ctcctgggtg
60
ctgaacgttg cattctgtcc tgatgacact cactttgttt ccagatccca gtgttggtca
120
ggcctgggat ggccaagaca gttggaaagc aggagatgga caacttgaag gcattgcaca
180
gtgctttaga ggcctcctgc gagccttggt tttgaagctt taacaggcct ccctcccatc
240
tggaaatagg tagctgtgtc tgagactcct ggagaacaat taatatgagg gccaggcaga
300
tcacaatttc aggaaaatgg ctaccctgtg aggagagaaa gccacccaat gatgctgata
360
cctggccatt tcctgtaccg aggcatggng ttggggggtc tgaagttag
409
```

<210> 4470
<211> 55
<212> PRT
<213> Homo sapiens

<400> 4470
```
Ile Tyr Asp Ala Gln His Ala Asn Leu Ala Gly Thr Leu Ser Gly His
```

```
    1                 5                    10                   15
Ala Ser Trp Val Leu Asn Val Ala Phe Cys Pro Asp Asp Thr His Phe
                20                   25                   30
Val Ser Arg Ser Gln Cys Trp Ser Gly Leu Gly Trp Pro Arg Gln Leu
            35                   40                   45
Glu Ser Arg Arg Trp Thr Thr
        50                   55
```

<210> 4471
<211> 1771
<212> DNA
<213> Homo sapiens

<400> 4471
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ctgggcccca atcaccacgc tgtgctcccc acacccgcaa ggctccccct cctcagcctt
60
agtttcctct tctggaaatt ggggaatctt catgtcacct tcttgacagc atttgccagg
120
catccagcag gcgcttaata aatggccaag tcattgtttg ggtttctaaa taaggctctc
180
ctaatggccg ggtctggcca cggtcccagt gtccctgggc agccctccga ggggccggca
240
cagggcgcac tataaatgag cggctgcgca cgcaggggca ctgcaacgcg gaggagcagg
300
atggagatcc ctgtgcctgt gcagccgtct tggctgcgcc gcgcctcggc cccgttgccc
360
ggactttcgg cgcccggacg cctctttgac cagcgcttcg gcgaggggct gctggaggcc
420
gagctggctg cgctctgccc caccacgctc gcccctact acctgcgcgc acccagcgtg
480
gcgctgcccg tcgcccaggt gccgacggac cccggccact tttcggtgct gctagacgtg
540
aagcacttct cgccggagga aattgctgtc aaggtggtgg cgaacacgt ggaggtgcac
600
gcgcgccacg aggagcgccc ggatgagcac ggattcgtcg cgcgcgagtt ccaccgtcgc
660
taccgcctgc cgcctggcgt ggatccggct gccgtgacgt ccgcgctgtc ccccgagggc
720
gtcctgtcca tccaggccgc accagcgtcg gcccaggccc caccgccagc cgcagccaag
780
taggaggggg ctgggccgcg cccgcacccc gggagcctcc tcaggctccc tctattaaag
840
ccgatctgac tccgcccagc cagatgtccc gagtgcgcca aggactgtcc tctcacccac
900
tcctggattc tgccctgacc tccatcctgg acactgcctt gataacatag acccttccac
960
tgacaccctc gctctcacac cccctccagc tttccgaccc cacaccgaca actccccggc
1020
ttccagaccc taccagcact accctaaccc tcagccgaca gtctcagccc caccgaccca
1080
ctttcttggc atatagcccc acttaagacc cctcctctac ttccttctga gtcctctaca
1140
aagacatccg ggtactacat ttccatccct tccctatttt gacaccaaat tatggtgtag
1200
```

```
acagccctcc cccaacccca ggccagtcag gcacaatccc cccaccccc aaacgtcctg
1260
gactgcacag acctcccact ccagaccatc caggcctggt tcccaagacc cgatccttcc
1320
cctgcaacca gacagtctac aactgccccc tccagcccat tttctgccgt gaaaccccag
1380
ccagccacac cagactctgg aacccttttt cgactgcccc aactcttgga caccaggcca
1440
actagaacac ccaacaccaa actgtacaga ctctcccacc ccaacctccc cagactctgc
1500
acggatgtcc taggcccct ccccaactct aaccagaccc catcccccta agtccctttg
1560
tcttgacccc caagtcttca accagatatc ctcggcaacc cacctcccac cctcctcctc
1620
ttctccttca agacccaact gagcacccgc tctgattccc cacagccttt ctccctgcca
1680
ccactccctt agtctttccc aggcttactc tcccaataaa tgtgctagag ctctgccaaa
1740
aaaagaaaaa aaagtcgacg cggccggaat t
1771
```

<210> 4472
<211> 160
<212> PRT
<213> Homo sapiens

<400> 4472

```
Met Glu Ile Pro Val Pro Val Gln Pro Ser Trp Leu Arg Arg Ala Ser
1               5                   10                  15
Ala Pro Leu Pro Gly Leu Ser Ala Pro Gly Arg Leu Phe Asp Gln Arg
            20                  25                  30
Phe Gly Glu Gly Leu Leu Glu Ala Glu Leu Ala Ala Leu Cys Pro Thr
            35                  40                  45
Thr Leu Ala Pro Tyr Tyr Leu Arg Ala Pro Ser Val Ala Leu Pro Val
        50                  55                  60
Ala Gln Val Pro Thr Asp Pro Gly His Phe Ser Val Leu Leu Asp Val
65                  70                  75                  80
Lys His Phe Ser Pro Glu Glu Ile Ala Val Lys Val Val Gly Glu His
                85                  90                  95
Val Glu Val His Ala Arg His Glu Glu Arg Pro Asp Glu His Gly Phe
            100                 105                 110
Val Ala Arg Glu Phe His Arg Arg Tyr Arg Leu Pro Pro Gly Val Asp
            115                 120                 125
Pro Ala Ala Val Thr Ser Ala Leu Ser Pro Glu Gly Val Leu Ser Ile
        130                 135                 140
Gln Ala Ala Pro Ala Ser Ala Gln Ala Pro Pro Pro Ala Ala Ala Lys
145                 150                 155                 160
```

<210> 4473
<211> 1255
<212> DNA
<213> Homo sapiens

<400> 4473

3655

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gccggcgcga tgccccgccc cttcgatagc tcatctttgc gcgccgcagt cgcgcggagc
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ccggcttccg acgtgcagcc tggcagtgca gtgagctgtc tggccttttg tccttgatcc
120
ttggttaagg aaatgaccaa ccagtacggt attctcttca aacaagagca agcccatgat
180
gatgccattt ggtcagttgc ttgggggaca aacaagaagg aaaactctga gacagtggtc
240
acaggctccc tagatgacct ggtgaaggtc tggaaatggc gtgatgagag ctggaccta
300
cagtggagtc tggagggaca tcagctggga gtggtgtctg tggacatcag ccacaccctt
360
cccattgctg cctccagttc tctagatgct catattcgac tctgggactt ggaaaatggc
420
aaacagatga agtctataga tgcaggaccg gtggatgcct ggactttggc attctctccg
480
gactcccagc atctggcaac aggaactcac atggggaaag tgaacatttt tggtgtggaa
540
agtggaaaaa aagaatactc tttggacact agaggaaaat tcatccttag tattgcatat
600
agtcctgatg gaaaatacct ggccagcgga gccatagatg gaatcatcaa tatttttgat
660
attgcaactg gaaaacttct gcataccctg gaaggccatg ccatgcccat tcgctccttg
720
accttttccc cggactccca gctccttgtc actgcttcag atgatggcta catcaagatc
780
tatgatgtac aacatgccaa tttggctggc acgctgagcg gccatgcctc ctgggtgctg
840
aacgttgcat tctgtcctga tgacactcac tttgtttcca gttcgtctga caaaagtgta
900
aaagtttggg atgttggaac gaggacttgt gttcacacct tctttgatca ccaggatcag
960
gtctggggag taaaatacaa tggaaatggt tcaaaaattg tgtctgttgg agatgaccag
1020
gaaattcaca tctatgattg tccaatttaa acatcaaagt ctccaggctt atgctgcaaa
1080
gagaatgtac ggattgatca tgacattcct taccttctta ggcttgttta aaagaaatat
1140
agcatttatt gtagcaaaga cttaaatttt gtagatacaa tatgaatctt ttcatgtttt
1200
attggaaatg ctgttcatac tttaacataa agctttctta atgcaaaaaa aaaaa
1255
```

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<210> 4474
<211> 305
<212> PRT
<213> Homo sapiens
```

```
<400> 4474
Met Thr Asn Gln Tyr Gly Ile Leu Phe Lys Gln Glu Gln Ala His Asp
 1               5                  10                  15
Asp Ala Ile Trp Ser Val Ala Trp Gly Thr Asn Lys Lys Glu Asn Ser
                20                  25                  30
Glu Thr Val Val Thr Gly Ser Leu Asp Asp Leu Val Lys Val Trp Lys
```

```
           35                       40                       45
Trp Arg Asp Glu Arg Leu Asp Leu Gln Trp Ser Leu Glu Gly His Gln
      50                       55                       60
Leu Gly Val Val Ser Val Asp Ile Ser His Thr Leu Pro Ile Ala Ala
65                       70                       75                  80
Ser Ser Ser Leu Asp Ala His Ile Arg Leu Trp Asp Leu Glu Asn Gly
                   85                       90                       95
Lys Gln Met Lys Ser Ile Asp Ala Gly Pro Val Asp Ala Trp Thr Leu
                  100                      105                      110
Ala Phe Ser Pro Asp Ser Gln His Leu Ala Thr Gly Thr His Met Gly
                  115                      120                      125
Lys Val Asn Ile Phe Gly Val Glu Ser Gly Lys Lys Glu Tyr Ser Leu
                  130                      135                      140
Asp Thr Arg Gly Lys Phe Ile Leu Ser Ile Ala Tyr Ser Pro Asp Gly
145                      150                      155                      160
Lys Tyr Leu Ala Ser Gly Ala Ile Asp Gly Ile Ile Asn Ile Phe Asp
                  165                      170                      175
Ile Ala Thr Gly Lys Leu Leu His Thr Leu Glu Gly His Ala Met Pro
                  180                   .   185                      190
Ile Arg Ser Leu Thr Phe Ser Pro Asp Ser Gln Leu Leu Val Thr Ala
                  195                      200                      205
Ser Asp Asp Gly Tyr Ile Lys Ile Tyr Asp Val Gln His Ala Asn Leu
210                      215                      220
Ala Gly Thr·Leu Ser Gly His Ala Ser Trp Val Leu Asn Val Ala Phe
225                      230                      235                      240
Cys Pro Asp Asp Thr His Phe Val Ser Ser Ser Ser Asp Lys Ser Val
                  245                      250                      255
Lys Val Trp Asp Val Gly Thr Arg Thr Cys Val His Thr Phe Phe Asp
                  260                      265                      270
His Gln Asp Gln Val Trp Gly Val Lys Tyr Asn Gly Asn Gly Ser Lys
                  275                      280                      285
Ile Val Ser Val Gly Asp Asp Gln Glu Ile His Ile Tyr Asp Cys Pro
                  290                      295                      300
Ile
305

<210> 4475
<211> 475
<212> DNA
<213> Homo sapiens

<400> 4475
acgcgtgaac ccgtgagctt gggaggggat atcgtccaag cgaggtctct ctgatcccgc
60
tggtgtccag actccttctg gagttccaat cccaccccctg gcacactgtc catctctggc
120
tggtctgtcg tgaagctgga gagccgtgca aggcgacaga gccttctgtg tggcccgtcc
180
tggcgctctg gggcaagggc tgacttgagc tgcttcgtct gctcatctgc tgtctgccag
240
ctgccctcag acctcctcct gggtgcagcc cgttcccact tgagagggag gtggtcttca
300
ctttaggggg taggcacatc cctgtttgcg ccttgccccg acagcctcgt caatgcccag
360
```

ccacttctga gggctggagg acaggaact tcctttcttc cccctttctg tctcctcgcg
420
tgggtacaaa agcacgtctg tagtccatgt gtgtgaagag aggacgcatt ctaga
475

<210> 4476
<211> 106
<212> PRT
<213> Homo sapiens

<400> 4476
Met Cys Leu Pro Pro Lys Val Lys Thr Thr Ser Leu Ser Ser Gly Asn
  1   5   10   15
Gly Leu His Pro Gly Gly Gly Leu Arg Ala Ala Gly Arg Gln Gln Met
             20   25   30
Ser Arg Arg Ser Ser Ser Ser Gln Pro Leu Pro Gln Ser Ala Arg Thr
         35   40   45
Gly His Thr Glu Gly Ser Val Ala Leu His Gly Ser Pro Ala Ser Arg
     50   55   60
Gln Thr Ser Gln Arg Trp Thr Val Cys Gln Gly Trp Asp Trp Asn Ser
 65   70   75   80
Arg Arg Ser Leu Asp Thr Ser Gly Ile Arg Glu Thr Ser Leu Gly Arg
                 85   90   95
Tyr Pro Leu Pro Ser Ser Arg Val His Ala
                100   105

<210> 4477
<211> 1153
<212> DNA
<213> Homo sapiens

<400> 4477
ctcttggcct ggcctcctgc agtgccacgc tccgtgtatt tgacaagctg agttggacac
60
tccatgtggt agagtgtcag tttgtcaaat accccaagtg cggcacatgc ttaccagctc
120
taggccaggg cagatgggat atgacgaatg gactgccagc tggatacaag gatgctcacc
180
aagcaccaag ttctcacaag ttattttatg tgactttgca ggaactgagg cattatatct
240
gaggacacca ggggaaaagt gtggcatctc agggaaatac agccctgggc tgtgtctaca
300
cacaccatga gagtgctgat gggggcgcaa tagtcttgaa aatgtataaa gtgtccagga
360
atggaagtgc tctttgattc attattattt tcttccttca tattcccctc ccagagtctc
420
ctatctagga catcagcatt ctcacacaag cctaatggct tatctgagta agcagggctt
480
agaaattcac tttcttgata ctcagtcttg ccttctaaac actccttgat cttgcctacc
540
tctccccttt tccacatgtc ttttcctgta ggaacacttt ctccatttat tcctgcctat
600
ccaattcttc cctatatttc ctggaccagc taaagtccag tgtttccaga gactttgaa
660

agtcaactta cacttttttcc ttcttcattc acaaagctct tcttccctgg gccctggtat
720

gtatgccttt ctctcctact gtctaatagc acctcgtaaa ttgtcaatga acttttctaa
780

ggggtattct tgaattccca actagattgt gagcttctgg aagacaaggc tatgtctttg
840

attgttgtct ccctaccac agcccagtac tttagttaca gaaataata aatatttact
900

gattgattga ctttcctctt gtccactagc tttaggtttg ggggccaaat tctaccctgg
960

attttgaaaa attcaaactg tgaacaccac aatgttatag agcatatgag gtagtagcca
1020

gcatgaagga tgttttcttc ctgagaaaca gtgtcaaggg ctggaggaag agggcaaaat
1080

agcagactca gagggcaaat aaattttggt attacttggt cacacaaggt tatacaggtg
1140

ttttcttgta gga
1153

<210> 4478
<211> 118
<212> PRT
<213> Homo sapiens

<400> 4478
Met Trp Lys Arg Gly Glu Val Gly Lys Ile Lys Glu Cys Leu Glu Gly
1   5   10   15
Lys Thr Glu Tyr Gln Glu Ser Glu Phe Leu Ser Pro Ala Tyr Ser Asp
            20   25   30
Lys Pro Leu Gly Leu Cys Glu Asn Ala Asp Val Leu Asp Arg Arg Leu
            35   40   45
Trp Glu Gly Asn Met Lys Glu Glu Asn Asn Asn Glu Ser Lys Ser Thr
        50   55   60
Ser Ile Pro Gly His Phe Ile His Phe Gln Asp Tyr Cys Ala Pro Ile
65   70   75   80
Ser Thr Leu Met Val Cys Val Asp Thr Ala Gln Gly Cys Ile Ser Leu
            85   90   95
Arg Cys His Thr Phe Pro Leu Val Ser Ser Asp Ile Met Pro Gln Phe
            100   105   110
Leu Gln Ser His Ile Lys
            115

<210> 4479
<211> 2158
<212> DNA
<213> Homo sapiens

<400> 4479
nngcggcggc ctgcggcggg ttcggtgggc ccaatcccgg ggcggtgcgg ctgtttcggg
60

cgcgggcccc gcttttccgc accctgctcc ggcctcgact acggcgagcc tgagcgcggc
120

ggcggcccac gcgcagcaca gggagagatg agcagcacca gcagtaagag ggctccgacc
180

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acggcaaccc agaggctgaa gcaggactac cttcgcatta agaaagaccc ggtgccttac
240
atctgtgccg agcccctccc ttcgaatatt ctcgagtggc actatgtcgt ccgaggccca
300
gagatgaccc cttatgaagg tggctattac catggaaaac taattttttcc cagagaattt
360
cctttcaaac ctcccagtat ctatatgatc actcccaacg ggaggtttaa gtgcaacacc
420
aggctgtgtc tttctatcac ggatttccac ccggacacgt ggaacccggc ctggtctgtc
480
tccaccatcc tgactgggct cctgagcttc atggtggaga agggccccac cctgggcagt
540
atagagacgt cggacttcac gaaaagacaa ctggcagtgc agagtttagc atttaatttg
600
aaagataaag tcttttgtga attatttcct gaagtcgtgg aggagattaa acaaaaacag
660
aaagcacaag acgaactcag tagcagaccc cagactctcc ccttgccaga cgtggttcca
720
gacggggaga cgcacctcgt ccagaacggg attcagctgc tcaacgggca tgcgccgggg
780
gccgtcccaa acctcgcagg gctccagcag gccaaccggc accacggact cctgggtggc
840
gccctggcga acttgtttgt gatagttggg tttgcagcct ttgcttacac ggtcaagtac
900
gtgctgagga gcatcgcgca ggagtgaggc ccaggcgccg agacccaagg cgccactgag
960
ggcaccgcgc accagagcgt gacctcggca ggctggacac actgcccagc acaggcagac
1020
ccaccaggct cctaggttta gcttttaaaa acctgaaagg ggaagcaaaa accaaaatgt
1080
gtgactgggc tttggaggag actggagcct cagccctgtc ctggccacgg gccgctgggg
1140
ctggtgtggg tgggccttgt gtgctggatt tgtagcttat cttccgtgtt gtctttggac
1200
ctgtttttagt aaacccgttt ttcattttat tagatgtggt cacttagaaa tgcaaacttg
1260
ctgccgaccg cgggctgctc ctgcgttctt ggagctcctg gcgcgtttct cggagctccc
1320
ggctcctcag cgggtgggaa cctcggggcc caggggtgga gctggcgtcc gcgggtgctg
1380
gtctggcctg gccgtgtggt gatgaggctt agcggggcca gtgacggccg tggctcagga
1440
tccataagtc ggggtttggt ctcagcattt acaaatgtgt ttacagtcag aatgaaacac
1500
attccttcta gaaagtgctt gggggttttt gctgccctgg aagccaggag cctgctcact
1560
ccaaccacaa gtcgcccttg actgcggcgg ccgcgagcgg ggcgggggct gccggtgccc
1620
tccgcaggcc gggcctcctg ggcgcccctc ggtgctgcag ctggggggc cttgggtacc
1680
tgcagagcct tttctctgaa ttccttatgt ccggtgggcc agaagcccgt cctcctatgc
1740
tggtggaagg cggaggaccg gagtccctgc agaaggcccc gtgcactcgg gggcctccct
1800
```

3660

cacatcccgt gcccctgcg ctggccttca cagtaggtaa tggctccggc ccgggtgttc
1860
gctgtccacg gaacatggca gaggggcacc ccggcccgga aagacgccag agccagcagg
1920
ggctgtttcg ggccgcgtgg ctccccgggt ctcggccgtc tcccctcttc tgcgtctgtt
1980
ccgtgacttc gcctgggtgg gatgtaccgc aggtgcatcg cgtcgaggtg gggcacggcc
2040
gccggcaaga aacccaccct gtccggaggc gggcgtgaga caagcccagc ccgcacgcgc
2100
tcatctttct tcgtttttg atcagtttat tcagaattgc tctataattt accaattg
2158

<210> 4480
<211> 308
<212> PRT
<213> Homo sapiens

<400> 4480
Xaa Arg Arg Pro Ala Ala Gly Ser Val Gly Pro Ile Pro Gly Arg Cys
 1   5   10   15
Gly Cys Phe Gly Arg Gly Pro Arg Phe Ser Ala Pro Cys Ser Gly Leu
            20   25   30
Asp Tyr Gly Glu Pro Glu Arg Gly Gly Pro Arg Ala Ala Gln Gly
        35   40   45
Glu Met Ser Ser Thr Ser Ser Lys Arg Ala Pro Thr Thr Ala Thr Gln
    50   55   60
Arg Leu Lys Gln Asp Tyr Leu Arg Ile Lys Lys Asp Pro Val Pro Tyr
65   70   75   80
Ile Cys Ala Glu Pro Leu Pro Ser Asn Ile Leu Glu Trp His Tyr Val
                85   90   95
Val Arg Gly Pro Glu Met Thr Pro Tyr Glu Gly Gly Tyr Tyr His Gly
            100   105   110
Lys Leu Ile Phe Pro Arg Glu Phe Pro Phe Lys Pro Pro Ser Ile Tyr
            115   120   125
Met Ile Thr Pro Asn Gly Arg Phe Lys Cys Asn Thr Arg Leu Cys Leu
    130   135   140
Ser Ile Thr Asp Phe His Pro Asp Thr Trp Asn Pro Ala Trp Ser Val
145   150   155   160
Ser Thr Ile Leu Thr Gly Leu Leu Ser Phe Met Val Glu Lys Gly Pro
                165   170   175
Thr Leu Gly Ser Ile Glu Thr Ser Asp Phe Thr Lys Arg Gln Leu Ala
            180   185   190
Val Gln Ser Leu Ala Phe Asn Leu Lys Asp Lys Val Phe Cys Glu Leu
            195   200   205
Phe Pro Glu Val Val Glu Glu Ile Lys Gln Lys Gln Lys Ala Gln Asp
    210   215   220
Glu Leu Ser Ser Arg Pro Gln Thr Leu Pro Leu Pro Asp Val Val Pro
225   230   235   240
Asp Gly Glu Thr His Leu Val Gln Asn Gly Ile Gln Leu Leu Asn Gly
                245   250   255
His Ala Pro Gly Ala Val Pro Asn Leu Ala Gly Leu Gln Gln Ala Asn
            260   265   270
Arg His His Gly Leu Leu Gly Gly Ala Leu Ala Asn Leu Phe Val Ile

```
           275                280                285
Val Gly Phe Ala Ala Phe Ala Tyr Thr Val Lys Tyr Val Leu Arg Ser
       290                295                300
Ile Ala Gln Glu
305


<210> 4481
<211> 320
<212> DNA
<213> Homo sapiens


<400> 4481
·ggcacccctg tggggatggg ctgtgcctgg aggctggggg gctgcatctg gacagcctct
60
gggtggggcc tcggaacctc ctgctgtgca gccagaaaac aggactcggc ctgtccaccc
120
acgtggggag gggaccccgg gctgggcttc gtaggggctt caaggacccc tgacttctgg
180
ggtgtgcctg acagcagggg aggccccaga gctggccttg gccatgtcca gtccctaatt
240
gacctttgtc ccttccttcc cctgcctctc tgtgcgtcgc tggactcgcc acgggagttc
300
tcacgaatgg gcacccaatt
320


<210> 4482
<211> 101
<212> PRT
<213> Homo sapiens


<400> 4482
Met Gly Cys Ala Trp Arg Leu Gly Gly Cys Ile Trp Thr Ala Ser Gly
1               5               10               15
Trp Gly Leu Gly Thr Ser Cys Cys Ala Ala Arg Lys Gln Asp Ser Ala
           20               25               30
Cys Pro Pro Thr Trp Gly Gly Asp Pro Gly Leu Gly Phe Val Gly Ala
       35               40               45
Ser Arg Thr Pro Asp Phe Trp Gly Val Pro Asp Ser Arg Gly Gly Pro
   50               55               60
Arg Ala Gly Leu Gly His Val Gln Ser Leu Ile Asp Leu Cys Pro Phe
65               70               75               80
Leu Pro Leu Pro Leu Cys Ala Ser Leu Asp Ser Pro Arg Glu Phe Ser
               85               90               95
Arg Met Gly Thr Gln
               100


<210> 4483
<211> 1852
<212> DNA
<213> Homo sapiens


<400> 4483
nnggttgcgg cgtgccggga gctgagttat agctgtgact tctgccctgc caggccgcac
60
```

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acaagctggc tgacccggtt tgtaaaaatg gaatttcaag cagtagtgat ggcagtaggt
120
ggaggatctc ggatgacaga cctaacttcc agcattccca aacctctgct tccagttggg
180
aacaaacctt taatttggta cccattgaac ctgcttgagc gtgttggatt tgaagaagtc
240
attgtggtta caaccaggga tgttcaaaag gctctatgtg cagaattcaa gatgaaaatg
300
aagccagata ttgtgtgtat tcctgatgac gctgacatgg gaactgcaga ttctttgcgc
360
tacatatatc caaaacttaa gacagatgtg ctggtgctga gctgtgatct gataacagac
420
gttgccttac atgaggttgt ggacctgttt agagcttatg atgcatcact tgctatgttg
480
atgagaaaag gccaagatag catagaacct gttcccggtc aaaagggggaa aaaaaaagca
540
gtggagcagc gtgacttcat tggagtggac agcacaggaa agaggctgct cttcatggct
600
aatgaagcag acttggatga agagctggtc attaagggat ccatcctaca gaagcatcct
660
agaatacgtt tccacacggg tcttgtggat gcccacctct actgtttgaa aaaatacatc
720
gtggatttcc taatggaaaa tgggtcaata acttctatcc ggagtgaact gattccatat
780
ttagtgagaa aacagttttc ctcagcttcc tcacaacagg gacaagaaga aaaagaggag
840
gatctaaaga aaaaggagct gaagtcctta gatatctaca gttttataaa agaagccaat
900
acactgaacc tggctcccta tgatgcctgc tggaatgcct gtcgaggaga caggtgggaa
960
gacttgtcca gatcacaggt gcgctgctat gtccacatca tgaaagaggg gctctgctct
1020
cgagtgagca cactgggact ctacatggaa gcaaacagac aggtgcccaa attgctgtct
1080
gctctctgtc cagaagaacc accagtccat tcgtcagccc agattgtcag caaacacctg
1140
gttggagttg acagcctcat tgggccagag acacagattg gagagaagtc atccattaag
1200
cgctcagtca ttggctcatc ctgtctcata aaagatagag tgactattac caattgcctt
1260
ctcatgaact cagtcactgt ggaggaagga agcaatatcc aaggcagtgt catctgcaac
1320
aatgctgtga tcgagaaggg tgcagacatc aaggactgct tgattggaag tggccagagg
1380
attgaagcca aagctaaacg agtgaatgag gtgatcgtgg ggaatgacca gctcatggag
1440
atctgagttc tgagcaagtc agactccttc cttttggcct ccaaagccac agatgttggc
1500
cggcccacct gtttaactct gtatttattt cccaataaag aagggcttcc aaaggcatgc
1560
tggagacttg tggagcagtc caaagctcca tgtcaggtgg ctccaggtg tacacagtgt
1620
atgttcatgt gtcatgtggt aaagatcatc tggagcaagt gtgtgggaca ggacagatac
1680
```

3663

```
agtggcctaa ctcttgtgtg ccaagatgta tcggtggggc agcagctgtc caatgtaaag
1740
ctcctaggaa ggctactttc tgactggctg acccaaccca gtcctgaaag tatccctcac
1800
ctaaaaggac ctgggagtac ttcagtccct tatcctaatc agcctttcta ga
1852
```

```
<210> 4484
<211> 452
<212> PRT
<213> Homo sapiens
```

```
<400> 4484
Met Glu Phe Gln Ala Val Val Met Ala Val Gly Gly Gly Ser Arg Met
1               5                   10                  15
Thr Asp Leu Thr Ser Ser Ile Pro Lys Pro Leu Leu Pro Val Gly Asn
            20                  25                  30
Lys Pro Leu Ile Trp Tyr Pro Leu Asn Leu Leu Glu Arg Val Gly Phe
        35                  40                  45
Glu Glu Val Ile Val Val Thr Thr Arg Asp Val Gln Lys Ala Leu Cys
    50                  55                  60
Ala Glu Phe Lys Met Lys Met Lys Pro Asp Ile Val Cys Ile Pro Asp
65                  70                  75                  80
Asp Ala Asp Met Gly Thr Ala Asp Ser Leu Arg Tyr Ile Tyr Pro Lys
                85                  90                  95
Leu Lys Thr Asp Val Leu Val Leu Ser Cys Asp Leu Ile Thr Asp Val
            100                 105                 110
Ala Leu His Glu Val Val Asp Leu Phe Arg Ala Tyr Asp Ala Ser Leu
        115                 120                 125
Ala Met Leu Met Arg Lys Gly Gln Asp Ser Ile Glu Pro Val Pro Gly
    130                 135                 140
Gln Lys Gly Lys Lys Lys Ala Val Glu Gln Arg Asp Phe Ile Gly Val
145                 150                 155                 160
Asp Ser Thr Gly Lys Arg Leu Leu Phe Met Ala Asn Glu Ala Asp Leu
                165                 170                 175
Asp Glu Glu Leu Val Ile Lys Gly Ser Ile Leu Gln Lys His Pro Arg
            180                 185                 190
Ile Arg Phe His Thr Gly Leu Val Asp Ala His Leu Tyr Cys Leu Lys
        195                 200                 205
Lys Tyr Ile Val Asp Phe Leu Met Glu Asn Gly Ser Ile Thr Ser Ile
    210                 215                 220
Arg Ser Glu Leu Ile Pro Tyr Leu Val Arg Lys Gln Phe Ser Ser Ala
225                 230                 235                 240
Ser Ser Gln Gln Gly Gln Glu Glu Lys Glu Glu Asp Leu Lys Lys Lys
                245                 250                 255
Glu Leu Lys Ser Leu Asp Ile Tyr Ser Phe Ile Lys Glu Ala Asn Thr
            260                 265                 270
Leu Asn Leu Ala Pro Tyr Asp Ala Cys Trp Asn Ala Cys Arg Gly Asp
        275                 280                 285
Arg Trp Glu Asp Leu Ser Arg Ser Gln Val Arg Cys Tyr Val His Ile
    290                 295                 300
Met Lys Glu Gly Leu Cys Ser Arg Val Ser Thr Leu Gly Leu Tyr Met
305                 310                 315                 320
Glu Ala Asn Arg Gln Val Pro Lys Leu Leu Ser Ala Leu Cys Pro Glu
```

3664

```
                   325                    330                    335
Glu Pro Pro Val His Ser Ser Ala Gln Ile Val Ser Lys His Leu Val
             340                    345                    350
Gly Val Asp Ser Leu Ile Gly Pro Glu Thr Gln Ile Gly Glu Lys Ser
             355                    360                    365
Ser Ile Lys Arg Ser Val Ile Gly Ser Ser Cys Leu Ile Lys Asp Arg
        370                    375                    380
Val Thr Ile Thr Asn Cys Leu Leu Met Asn Ser Val Thr Val Glu Glu
385                    390                    395                    400
Gly Ser Asn Ile Gln Gly Ser Val Ile Cys Asn Asn Ala Val Ile Glu
                   405                    410                    415
Lys Gly Ala Asp Ile Lys Asp Cys Leu Ile Gly Ser Gly Gln Arg Ile
             420                    425                    430
Glu Ala Lys Ala Lys Arg Val Asn Glu Val Ile Val Gly Asn Asp Gln
        435                    440                    445
Leu Met Glu Ile
    450


<210> 4485
<211> 513
<212> DNA
<213> Homo sapiens

<400> 4485
ggatccacgt cagcccgaca tcgctgcttt atagccatgt tcacgtgtca tatgcgtctc
60
agggtaccca aaatcacagg gccaactcac ggggctccta ccactctagc cagtcatggg
120
gtcaggaata ccccaccctc atccaaaatg tgtactcccc caaccttttg tgttcagacc
180
cacaggcctt atagcgccct gtgcgtgccc cagcatttcc ctgcctagtg gggctccagg
240
cgggcagggt gacctccttc cccaggcagt tccacacctg atcccaaaag tcagttctaa
300
tgaagtggat tcattcaaat actggtggtt ctggttggcc cgggtaagtg agggcacaga
360
gaaaacccccc aaatgtagag tatgtgacac agcacaaagc agtcccatgc caaactgatg
420
cagtggcatt ccaagtttag agttccaccg cttgagacca tccaggattc ttttaccaat
480
tacttgtcct actgtctcct atctatttca tga
513


<210> 4486
<211> 100
<212> PRT
<213> Homo sapiens

<400> 4486
Met Gly Ser Gly Ile Pro His Pro His Pro Lys Cys Val Leu Pro Gln
1               5                    10                    15
Pro Phe Val Phe Arg Pro Thr Gly Leu Ile Ala Pro Cys Ala Cys Pro
             20                    25                    30
Ser Ile Ser Leu Pro Ser Gly Ala Pro Gly Gly Gln Gly Asp Leu Leu
```

```
              35                       40                       45
   Pro Gln Ala Val Pro His Leu Ile Pro Lys Val Ser Ser Asn Glu Val
              50                       55                       60
   Asp Ser Phe Lys Tyr Trp Trp Phe Trp Leu Ala Arg Val Ser Glu Gly
   65                       70                       75                       80
   Thr Glu Lys Thr Pro Lys Cys Arg Val Cys Asp Thr Ala Gln Ser Ser
                           85                       90                       95
   Pro Met Pro Asn
                  100


   <210> 4487
   <211> 387
   <212> DNA
   <213> Homo sapiens


   <400> 4487
   nnacgcgtaa agatactttt tcttttctgg attcccaatt ttaggtggca gtcgcaaccc
   60
   atactattcg gacagatggc acagaaaccg ctgcgcctct tggcttgtgg agatgttgaa
   120
   ggaaagtttg atattttatt caatagagtt caagcaattc agaagaaaag tggaaacttt
   180
   gatctgctgt tgtgtgtagg aaatttctttt ggctccaccc aagatgctga atgggaggag
   240
   tataagactg gcatcaagaa agctcctatt cagacatatg tgcttggtgc taataaccag
   300
   gaaacagtaa aatatttcca ggatgctgat ggatgtgaat tagctgaaaa cattacttat
   360
   ctgggtcgta aaggtatctt cactgga
   387


   <210> 4488
   <211> 129
   <212> PRT
   <213> Homo sapiens


   <400> 4488
   Xaa Arg Val Lys Ile Leu Phe Leu Phe Trp Ile Pro Asn Phe Arg Trp
   1                       5                       10                      15
   Gln Ser Gln Pro Ile Leu Phe Gly Gln Met Ala Gln Lys Pro Leu Arg
                           20                       25                       30
   Leu Leu Ala Cys Gly Asp Val Glu Gly Lys Phe Asp Ile Leu Phe Asn
                           35                       40                       45
   Arg Val Gln Ala Ile Gln Lys Lys Ser Gly Asn Phe Asp Leu Leu Leu
              50                       55                       60
   Cys Val Gly Asn Phe Phe Gly Ser Thr Gln Asp Ala Glu Trp Glu Glu
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   Tyr Lys Thr Gly Ile Lys Lys Ala Pro Ile Gln Thr Tyr Val Leu Gly
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   Ala Asn Asn Gln Glu Thr Val Lys Tyr Phe Gln Asp Ala Asp Gly Cys
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<212>  PRT
<213>  Homo sapiens

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Leu Leu Trp Lys Leu Met Trp Arg Glu Pro Gly Ala Tyr Ile Phe Leu
        35                  40                  45
Gln Asn Pro Pro Gly Leu Pro Ser Ile Ala Val Cys Trp Phe Val Gly
    50                  55                  60
Cys Leu Cys Gly Ser Lys Leu Val Ile Asp Trp His Asn Tyr Gly Tyr
65                  70                  75                  80
Ser Ile Met Gly Leu Val His Gly Pro Asn His Pro Leu Val Leu Leu
                85                  90                  95
Ala Lys Trp Tyr Glu Lys Phe Phe Gly Arg Leu Ser His Leu Asn Leu
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3668

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<210> 4490
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Pro Arg Val Phe Gln Tyr Gly Val Lys Val Val Leu Gln Ala Met Tyr
            20   25   30
Leu Leu Trp Lys Leu Met Trp Arg Glu Pro Gly Ala Tyr Ile Phe Leu
        35   40   45
Gln Asn Pro Pro Gly Leu Pro Ser Ile Ala Val Cys Trp Phe Val Gly
    50   55   60
Cys Leu Cys Gly Ser Lys Leu Val Ile Asp Trp His Asn Tyr Gly Tyr
65   70   75   80
Ser Ile Met Gly Leu Val His Gly Pro Asn His Pro Leu Val Leu Leu
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Ala Lys Trp Tyr Glu Lys Phe Phe Gly Arg Leu Ser His Leu Asn Leu

3668

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Pro Leu Asp Leu Gln His Arg Leu Phe Met Lys Leu Gly Ser Met His
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Ser Pro Phe Arg Ala Arg Ser Glu Pro Glu Asp Pro Val Thr Glu Arg
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Ser Ala Phe Thr Glu Arg Asp Ala Gly Ser Gly Leu Val Thr Arg Leu
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Arg Glu Arg Pro Ala Leu Leu Val Ser Ser Thr Ser Trp Thr Glu Asp
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Glu Asp Phe Ser Ile Leu Leu Ala Ala Leu Glu Lys Phe Glu Gln Leu
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Thr Leu Asp Gly His Asn Leu Pro Ser Leu Val Cys Val Ile Thr Gly
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Phe Gln His Ile Gln Val Cys Thr Pro Trp Leu Glu Ala Glu Asp Tyr
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Pro Leu Leu Leu Gly Ser Ala Asp Leu Gly Val Cys Leu His Thr Ser
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Ser Ser Gly Leu Asp Leu Pro Met Lys Val Val Asp Met Phe Gly Cys
    290                   295                   300
Cys Leu Pro Val Cys Ala Val Asn Phe Lys Cys Leu His Glu Leu Val
305                   310                   315                   320
Lys His Glu Glu Asn Gly Leu Val Phe Glu Asp Ser Glu Glu Leu Ala
                325                   330                   335
Ala Gln Leu Gln Met Leu Phe Ser Asn Phe Pro Asp Pro Ala Gly Lys
            340                   345                   350
Leu Asn Gln Phe Arg Lys Asn Leu Arg Glu Ser Gln Gln Leu Arg Trp
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360

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3670

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3673

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<213> Homo sapiens

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Lys Thr Asp Asn Arg Pro Glu Lys Ser Lys Cys Lys Pro Leu Trp Gly
        35                  40                  45
Lys Val Phe Tyr Leu Asp Leu Pro Ser Val Thr Ile Ser Glu Lys Leu
    50                  55                  60
Gln Lys Asp Ile Lys Asp Leu Gly Gly Arg Val Glu Glu Phe Leu Ser
65                  70                  75                  80
Lys Asp Ile Ser Tyr Leu Ile Ser Asn Lys Lys Glu Ala Lys Phe Ala
                85                  90                  95
Gln Thr Leu Gly Arg Ile Ser Pro Val Pro Ser Pro Glu Ser Ala Tyr
            100                 105                 110
Thr Ala Glu Thr Thr Ser Pro His Pro Ser His Asp Gly Ser Ser Phe
            115                 120                 125
Lys Ser Pro Asp Thr Val Cys Leu Ser Arg Gly Lys Leu Leu Val Glu
        130                 135                 140
Lys Ala Ile Lys Asp His Asp Phe Ile Pro Ser Asn Ser Ile Leu Ser
145                 150                 155                 160
Asn Ala Leu Ser Trp Gly Val Lys Ile Leu His Ile Asp Asp Ile Arg
                165                 170                 175
Tyr Tyr Ile Glu Gln Lys Lys Lys Glu Leu Tyr Leu Leu Lys Lys Ser
                180                 185                 190
Ser Thr Ser Val Arg Asp Gly Gly Lys Arg Val Gly Ser Gly Ala Gln
            195                 200                 205
Lys Thr Arg Thr Gly Arg Leu Lys Lys Pro Phe Val Lys Val Glu Asp
        210                 215                 220
Met Ser Gln Leu Tyr Arg Pro Phe Tyr Leu Gln Leu Thr Asn Met Pro
225                 230                 235                 240
Phe Ile Asn Tyr Ser Ile Gln Lys Pro Cys Ser Pro Phe Asp Val Asp
                245                 250                 255
Lys Pro Ser Ser Met Gln Lys Gln Thr Gln Val Lys Leu Arg Ile Gln
            260                 265                 270
Thr Asp Gly Asp Lys Tyr Gly Gly Thr Ser Ile Gln Leu Gln Leu Lys
        275                 280                 285
Glu Lys Lys Lys Lys Gly Tyr Cys Glu Cys Cys Leu Gln Lys Tyr Glu
    290                 295                 300
Asp Leu Glu Thr His Leu Leu Ser Glu Gln His Arg Asn Phe Ala Gln
305                 310                 315                 320
Ser Asn Gln Tyr Gln Val Val Asp Asp Ile Val Ser Lys Leu Val Phe
                325                 330                 335
Asp Phe Val Glu Tyr Glu Lys Asp Thr Pro Lys Lys Lys Arg Ile Lys
            340                 345                 350
Tyr Ser Val Gly Ser Leu Ser Pro Val Ser Ala Ser Val Leu Lys Lys
            355                 360                 365
Thr Glu Gln Lys Glu Lys Val Glu Leu Gln His Ile Ser Gln Lys Asp
        370                 375                 380
Cys Gln Glu Asp Asp Thr Thr Val Lys Glu Gln Asn Phe Leu Tyr Lys
385                 390                 395                 400
Glu Thr Gln Glu Thr Glu Lys Lys Leu Leu Phe Ile Ser Glu Pro Ile
```

```
                         405                    410                     415
Pro His Pro Ser Asn Glu Leu Arg Gly Leu Asn Glu Lys Met Ser Asn
                420                    425                     430
Lys Cys Ser Met Leu Ser Thr Ala Glu Asp Asp Ile Arg Gln Asn Phe
                435                    440                     445
Thr Gln Leu Pro Leu His Lys Asn Lys Gln Glu Cys Ile Leu Asp Ile
        450                    455                     460
Ser Glu His Thr Leu Ser Glu Asn Asp Leu Glu Glu Leu Arg Val Asp
465                    470                     475                     480
His Tyr Lys Cys Asn Ile Gln Ala Ser Val His Val Ser Asp Phe Ser
                485                    490                     495
Thr Asp Asn Ser Gly Ser Gln Pro Lys Gln Lys Ser Asp Thr Val Leu
                500                    505                     510
Phe Pro Ala Lys Asp Leu Lys Glu Lys Asp Leu His Ser Ile Phe Thr
        515                    520                     525
His Asp Ser Gly Leu Ile Thr Ile Asn Ser Ser Gln Glu His Leu Thr
        530                    535                     540
Val Gln Ala Lys Ala Pro Phe His Thr Pro Pro Glu Glu Pro Asn Glu
545                    550                     555                     560
Cys Asp Phe Lys Asn Met Asp Ser Leu Pro Ser Gly Lys Ile His Arg
                565                    570                     575
Lys Val Lys Ile Ile Leu Gly Arg Asn Arg Lys Glu Asn Leu Glu Pro
                580                    585                     590
Asn Ala Glu Phe Asp Lys Arg Thr Glu Phe Ile Thr Gln Glu Glu Asn
        595                    600                     605
Arg Ile Cys Ser Ser Pro Val Gln Ser Leu Leu Asp Leu Phe Gln Thr
        610                    615                     620
Ser Glu Glu Lys Ser Glu Phe Leu Gly Phe Thr Ser Tyr Thr Glu Lys
625                    630                     635                     640
Ser Gly Ile Cys Asn Val Leu Asp Ile Trp Glu Glu Glu Asn Ser Asp
                645                    650                     655
Asn Leu Leu Thr Ala Phe Phe Ser Ser Pro Ser Thr Ser Thr Phe Thr
                660                    665                     670
Gly Phe
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<210> 4493
<211> 1829
<212> DNA
<213> Homo sapiens

<400> 4493
nngtataaac tgtcaaattt tcaaataata ggtagggggc tttcactagg aaaatcatgt
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gctcaaaaga ggaaatgact cgtagtcagg ttcaggagtt agtggagtat ttggactttg
120
gtactgctgt cttccaaggt agctctaagt tttgatgtgt gggcttctga gtttatattc
180
tgaaaggaaa tacacttctt ttgaacatcc ccactaggtt cttttccatt gtcaataagg
240
agcatcagcc agtgaatctg tttcaggttt ccattctgca gaactcctcc aaagcatgtg
300
ctagtggcaa gacagtggtt cttatgatgt tttcccttaa cttttccttg tatgttcttg
360
```

ggtggttcct aagggaaagg gaagcacatg atcatgggaa tgatagccca gaacaaaaag
420
aaatcttgtc ttaccacagt gttttatagg agagattggg agaaatcatc ctgttttctc
480
tgtgacctga tttcagaaga gactgatcca aaaattataa cggcagggaa cctagtgcat
540
ttggcactga gatttaaatg caaccagaat tgtcctcaag gcccagccat aaaagcattg
600
tctctctcga ccttctggta tcttgttaga gagcttttca ctgtgaggaa gtgtggaaaa
660
atagctctgt gtgtgtgtgt gtgtgtgtgt gtgtgtgtgt gtaatctgtt aggttgggga
720
taggttttct gctagccaat attaaaagag acctgcaata aaaaaattac cctgnatctg
780
atagaaagca agtgtttttg tatgtgtggg tgaatgtgtg ttcatgcccg tatatgtcta
840
cacacagatg acaaattata tttgaaatcg ttggaaaata aattcagatc aaaatgcctt
900
tcaggcccat tacctagaaa tctatcttaa aacctgggta tgttcctaag gtcatttctt
960
tgcttatgct aaattaatta caattatgaa tggaggatat tctactgtac ttttttaaaa
1020
agaaactatt tttgtgtttg aaagtgaaac caacatccag atctatagca gagtccttat
1080
tcttctcata aatctttttta ctttggctac aaatagatga tggtatgatt ctattatata
1140
ttttatataa aatccatcca aattaagttt tgggtaagtg tgttgtttaa tctgaactat
1200
agtaacttaa tactctaaac aatagttcac tccatttggt cctttctcca cagatgtaat
1260
tatgttttca actcaggaac tatggcaagg aactttcccc agatcaaatt ctattaacgc
1320
tgagatacaa gtcatccatg cacagccact atcataccct ttattctcac tgaaaggcag
1380
aactcagaac ctgttatttt atgtctgtaa tcatgtactt tggcatcttt tggaggaaag
1440
gggcaggata actcactgga atgtacagta ttttgctagt gcatttcaag gaatggaatc
1500
ttctccagta tgaaattacc agatataaaa taatgtaatg atgctgagga tataagcttt
1560
tagaaggtaa tttgatggta tttctttctc gaatgaaaag ctgctggttt accctcaacc
1620
ctattcatta gcattaccat gagtgaattt atatctaatt atttccactt gccctgttct
1680
cttcacacca aggaagctcc agatccagta tcttgtttgg cctcaaaaca gaagcagctt
1740
cttttgtctc ccagcagtag tgagccactc agtctcttcc acaggaagtt tgggagccta
1800
cattccttga gtcagggagc ttaattaca
1829

<210> 4494
<211> 111
<212> PRT

3676

<210> Homo sapiens

<400> 4494
Met Ile Met Gly Met Ile Ala Gln Asn Lys Lys Lys Ser Cys Leu Thr
1   5   10   15
Thr Val Phe Tyr Arg Arg Asp Trp Glu Lys Ser Ser Cys Phe Leu Cys
            20   25   30
Asp Leu Ile Ser Glu Glu Thr Asp Pro Lys Ile Ile Thr Ala Gly Asn
        35   40   45
Leu Val His Leu Ala Leu Arg Phe Lys Cys Asn Gln Asn Cys Pro Gln
    50   55   60
Gly Pro Ala Ile Lys Ala Leu Ser Leu Ser Thr Phe Trp Tyr Leu Val
65   70   75   80
Arg Glu Leu Phe Thr Val Arg Lys Cys Gly Lys Ile Ala Leu Cys Val
                85   90   95
Cys Val Cys Val Cys Val Cys Val Cys Asn Leu Leu Gly Trp Gly
                100   105   110

<210> 4495
<211> 3623
<212> DNA
<213> Homo sapiens

<400> 4495
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tattgagagg aaaacacaag tccttaaact gcaaagatgt ttgccaggat gtctgatctc
120
catgttctgc tgttaatggc tctggtggga aagacagcct gtgggttctc cctgatgtct
180
ttattggaaa gcctggaccc agactggacc cctgaccagt atgattacag ctacgaggat
240
tataatcagg aagagaacac cagtagcaca cttacccacg ctgagaatcc tgactggtac
300
tacactgagg accaagctga tccatgccag cccaacccct gtgaacacgg tggggactgc
360
ctcgtccatg ggagcacctt cacatgcagc tgcctggctc ctttctctgg gaataagtgt
420
cagaaagtgc aaaatacgtg caaggacaac ccatgtggcc ggggccaatg tctcattacc
480cctactaccg ctgtgtctgt aaacaccctt acacaggtcc cagctgctcc   540
caagtggttc ctgtatgcag gccaaacccc tgccagaatg gggctacctg ctcccggcat
600
aagcggagat ccaagttcac ctgtgcctgt cccgaccagt tcaaggggaa attctgtgaa
660
ataggttctg atgactgcta tgttggcgat ggctactctt accgagggaa aatgaatagg
720
acagtcaacc agcatgcgtg cctttactgg aactcccacc tcctcttgca ggagaattac
780
aacatgttta tggaggatgc tgaaacccat gggattgggg aacacaattt ctgcagaaac
840
ccagatgcgg acgaaaagcc ctggtgcttt attaaagtta ccaatgacaa ggtgaaatgg
900
gaatactgtg atgtctcagc ctgctcagcc caggacgttg cctacccaga ggaaagcccc
960

actgagccat caaccaagct tccggggttt gactcctgtg gaaagactga gatagcagag
1020

aggaagatca agagaatcta tggaggcttt aaaagcacgg cgggcaagca cccatggcag
1080

gcgtccctcc agtcctcgct gcctctgacc atctccatgc cccagggcca cttctgtggt
1140

ggggcactga tccacccctg ctgggtgctc actgctgccc actgcaccga cataaaaacc
1200

agacatctaa aggtggtgct aggggaccag gacctgaaga aagaagaatt tcatgagcag
1260

agctttaggg tggagaagat attcaagtac agccactaca atgaaagaga tgagattccc
1320

cacaatgata ttgcattgct caagttaaag ccagtggatg gtcactgtgc tctagaatcc
1380

aaatacgtga agactgtgtg cttgcctgat gggtcctttc cctctgggag tgagtgccac
1440

atctctggct ggggtgttac agaaacagga aaagggtccc gccagctcct ggatgccaaa
1500

gtcaagctga ttgccaacac tttgtgcaac tcccgccaac tctatgacca catgattgat
1560

gacagtatga tctgtgcagg aaatcttcag aaacctgggc aagacacctg ccagggtgac
1620

tctggaggcc ccctgacctg tgagaaggac ggcacctact acgtctatgg gatagtgagc
1680

tggggcctgg agtgtgggaa gaggccaggg gtctacaccc aagttaccaa attcctgaat
1740

tggatcaaag ccaccatcaa aagtgaaagt ggcttctaag gtactgtctt ctggacctca
1800

gagcccactc tccttggcac cctgacaccg ggaggcctca tggccaacaa tggacacctc
1860

cagagcctcc aggggaccac acagtagact atccctactc taagcagaga caactgccac
1920

ccagcctggg ccttcccaga ccagcatttg cacaatatca ccaggcttct tctgcctccc
1980

ttggtaaccc aaggaatgat ggaatcaaca caacatagta tgtttgcttt ccttacccaa
2040

ttgtaccttc tagaaaatca gtgttcacag agactgcctc caccacaggc atcctgcaaa
2100

tgcagactcc agaatcccca gcatcagcgg gaaccaccat cacatcttta ttcctcagcc
2160

cagacactcg aggcactcaa cagaatcagc catccacgtc taggtatcag agaggaccac
2220

aaatacaaca ttctccatct gctttcagag ttattatttt aataaaggaa gatctgggat
2280

gggctggtgg gccattccag cttgccgaaa tcaaagccat ctgaagcctg tctctggtga
2340

acaaacttcc tctctggcct ctcaggaatc agggtggaca tggctcacaa cagcagggcc
2400

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2460

tctccagcct ccactgcttc tgccccccgg taagctccct ggagacccag gcccccttgcg
2520

ttggccagtt ccgcagcccg ccgagccatt tccactttgt aggagccagg aggggtccag
2580

3678

ccaacacctc tggtcaggtt caagtctgat ttatacttga catcactctg cagctggtgg
2640
gccttctgag catgcctgag gcccagctgc tccgggtcgc aggtgggctg gggcaggggc
2700
tgcctgtagt gcacatcact ggccagctgc tggctcctct tggcctgaag gaggccgggc
2760
tggtctgtgc tgctgtgaaa ctgggaccga ctcttggcaa agtccttctt gtactcattg
2820
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2880
cggtacccga tctgcaggcc tcggtcccgc aggaaagcct ctttgtaccg gaaatcactg
2940
gcgatctccc tagatgcccg ggcagtctgg aagggggatgg catccagcct gaagtcataa
3000
ctgccagccc gggtctgctc ccaggagttt ctgtagactt tgtcactcag atgcagcgca
3060
ttgaggcgag ctcgggtgaa atcgggatgg tcggggatca gggtgtatct gtgcagggat
3120
tctgcatctc cagatctata catgcgctca ttgcagtgca tatagctgtt cttggcatga
3180
accaggtctg gggagtcaac cactgtggtg aacttgatac tgtctggttt tttacggtac
3240
ttggtctcgc tgatgagttc tccagccttc tttgcactct ccatctgtgg ggatctcagc
3300
gccagccatc ctatgccctt catgccgatc aggtctgact tgtagcgcaa ctcactctgc
3360
agggcatggg ctttcttggc ccaggccatc ttcaggtcct cgggcagtgc tgtgaacttg
3420
tgatactgtg tcctgtagtc gtggtcgctg gccagagcct gggcattctt ggcatggacc
3480
aggtgcacca tgtccatggg cagatggaac tgggcttggc tgctggtcgc ccccctcctg
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3600
cttacactct ggggccctat gag
3623

<210> 4496
<211> 560
<212> PRT
<213> Homo sapiens

<400> 4496
Met Phe Ala Arg Met Ser Asp Leu His Val Leu Leu Leu Met Ala Leu
1   5   10   15
Val Gly Lys Thr Ala Cys Gly Phe Ser Leu Met Ser Leu Leu Glu Ser
            20   25   30
Leu Asp Pro Asp Trp Thr Pro Asp Gln Tyr Asp Tyr Ser Tyr Glu Asp
        35   40   45
Tyr Asn Gln Glu Glu Asn Thr Ser Ser Thr Leu Thr His Ala Glu Asn
    50   55   60
Pro Asp Trp Tyr Tyr Thr Glu Asp Gln Ala Asp Pro Cys Gln Pro Asn
65   70   75   80
Pro Cys Glu His Gly Gly Asp Cys Leu Val His Gly Ser Thr Phe Thr

```
                          85                        90                        95
Cys Ser Cys Leu Ala Pro Phe Ser Gly Asn Lys Cys Gln Lys Val Gln
                100                       105                       110
Asn Thr Cys Lys Asp Asn Pro Cys Gly Arg Gly Gln Cys Leu Ile Thr
            115                       120                       125
Gln Ser Pro Pro Tyr Tyr Arg Cys Val Cys Lys His Pro Tyr Thr Gly
        130                       135                       140
Pro Ser Cys Ser Gln Val Val Pro Val Cys Arg Pro Asn Pro Cys Gln
145                       150                       155                       160
Asn Gly Ala Thr Cys Ser Arg His Lys Arg Arg Ser Lys Phe Thr Cys
                165                       170                       175
Ala Cys Pro Asp Gln Phe Lys Gly Lys Phe Cys Glu Ile Gly Ser Asp
                180                       185                       190
Asp Cys Tyr Val Gly Asp Gly Tyr Ser Tyr Arg Gly Lys Met Asn Arg
            195                       200                       205
Thr Val Asn Gln His Ala Cys Leu Tyr Trp Asn Ser His Leu Leu Leu
        210                       215                       220
Gln Glu Asn Tyr Asn Met Phe Met Glu Asp Ala Glu Thr His Gly Ile
225                       230                       235                       240
Gly Glu His Asn Phe Cys Arg Asn Pro Asp Ala Asp Glu Lys Pro Trp
                245                       250                       255
Cys Phe Ile Lys Val Thr Asn Asp Lys Val Lys Trp Glu Tyr Cys Asp
                260                       265                       270
Val Ser Ala Cys Ser Ala Gln Asp Val Ala Tyr Pro Glu Glu Ser Pro
            275                       280                       285
Thr Glu Pro Ser Thr Lys Leu Pro Gly Phe Asp Ser Cys Gly Lys Thr
        290                       295                       300
Glu Ile Ala Glu Arg Lys Ile Lys Arg Ile Tyr Gly Gly Phe Lys Ser
305                       310                       315                       320
Thr Ala Gly Lys His Pro Trp Gln Ala Ser Leu Gln Ser Ser Leu Pro
                325                       330                       335
Leu Thr Ile Ser Met Pro Gln Gly His Phe Cys Gly Gly Ala Leu Ile
                340                       345                       350
His Pro Cys Trp Val Leu Thr Ala Ala His Cys Thr Asp Ile Lys Thr
                355                       360                       365
Arg His Leu Lys Val Val Leu Gly Asp Gln Asp Leu Lys Lys Glu Glu
        370                       375                       380
Phe His Glu Gln Ser Phe Arg Val Glu Lys Ile Phe Lys Tyr Ser His
385                       390                       395                       400
Tyr Asn Glu Arg Asp Glu Ile Pro His Asn Asp Ile Ala Leu Leu Lys
                405                       410                       415
Leu Lys Pro Val Asp Gly His Cys Ala Leu Glu Ser Lys Tyr Val Lys
                420                       425                       430
Thr Val Cys Leu Pro Asp Gly Ser Phe Pro Ser Gly Ser Glu Cys His
            435                       440                       445
Ile Ser Gly Trp Gly Val Thr Glu Thr Gly Lys Gly Ser Arg Gln Leu
        450                       455                       460
Leu Asp Ala Lys Val Lys Leu Ile Ala Asn Thr Leu Cys Asn Ser Arg
465                       470                       475                       480
Gln Leu Tyr Asp His Met Ile Asp Asp Ser Met Ile Cys Ala Gly Asn
                485                       490                       495
Leu Gln Lys Pro Gly Gln Asp Thr Cys Gln Gly Asp Ser Gly Gly Pro
            500                       505                       510
Leu Thr Cys Glu Lys Asp Gly Thr Tyr Tyr Val Tyr Gly Ile Val Ser
```

```
            515                 520                 525
Trp Gly Leu Glu Cys Gly Lys Arg Pro Gly Val Tyr Thr Gln Val Thr
        530                 535                 540
Lys Phe Leu Asn Trp Ile Lys Ala Thr Ile Lys Ser Glu Ser Gly Phe
545                 550                 555                 560
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<210> 4497
<211> 840
<212> DNA
<213> Homo sapiens

<400> 4497

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nnacgcgtga aacagaaagc agagaaaaag cgactcaaga agaagcgtca aaaggaacgg
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aagcgacagg agcgtttgga gcagtactgt ggggagccca aggccagcac tacctcagat
120
ggagatgaga gccccccatc cagccctgga aacccagttc agggacagtg tggtgaagaa
180
gaggactcac tggatctatc tagcactttt gtgtctctgg ctttgcgcaa ggttggggat
240
tggcccctca gtgcccgcag agagaaggga ctgaaccagg agccccaagg caggggtctg
300
gccctccaga agatgggtca agaggaagag agccctccaa gagaggagag gccccagcag
360
agtccaaagg catctccggg actgctggca gctgccttac aacagagcca ggaactggca
420
aagttgggta ccagctttgc tcaaaatggt ttctaccatg aggccgtggt cctcttcacc
480
caggccttga agctcaaccc ccaggaccac cggttatttg aaatcgttc cttctgccat
540
gagcggttgg gtcagccagc gtgggccctg gctgatgccc aggtggccct accctacgg
600
cctggctggc cccgggggcct cttccgcctg ggcaaggcct tgatgggact acagcgcttc
660
agagaggcag ctgctgtgtt tcaggaaact ctgagaggtg ggtcccagcc tgacgcagcc
720
cgagagctcc gctcttgcct tctccacctc acactgcagg gtcagcgagg aggaatctgt
780
gcaccgcctc tgtcacctgg ggccctccag ccacttcccc atgctgagct ggcaccctca
840
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<210> 4498
<211> 280
<212> PRT
<213> Homo sapiens

<400> 4498

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Xaa Arg Val Lys Gln Lys Ala Glu Lys Lys Arg Leu Lys Lys Lys Arg
1                   5                   10                  15
Gln Lys Glu Arg Lys Arg Gln Glu Arg Leu Glu Gln Tyr Cys Gly Glu
            20                  25                  30
Pro Lys Ala Ser Thr Thr Ser Asp Gly Asp Glu Ser Pro Pro Ser Ser
        35                  40                  45
Pro Gly Asn Pro Val Gln Gly Gln Cys Gly Glu Glu Glu Asp Ser Leu
```

```
         50                      55                      60
Asp Leu Ser Ser Thr Phe Val Ser Leu Ala Leu Arg Lys Val Gly Asp
65                      70                      75                      80
Trp Pro Leu Ser Ala Arg Arg Glu Lys Gly Leu Asn Gln Glu Pro Gln
                    85                      90                      95
Gly Arg Gly Leu Ala Leu Gln Lys Met Gly Gln Glu Glu Glu Ser Pro
                100                     105                     110
Pro Arg Glu Glu Arg Pro Gln Gln Ser Pro Lys Ala Ser Pro Gly Leu
            115                     120                     125
Leu Ala Ala Ala Leu Gln Gln Ser Gln Glu Leu Ala Lys Leu Gly Thr
            130                     135                     140
Ser Phe Ala Gln Asn Gly Phe Tyr His Glu Ala Val Val Leu Phe Thr
.145                    150                     155                     160
Gln Ala Leu Lys Leu Asn Pro Gln Asp His Arg Leu Phe Gly Asn Arg
                165                     170                     175
Ser Phe Cys His Glu Arg Leu Gly Gln Pro Ala Trp Ala Leu Ala Asp
                180                     185                     190
Ala Gln Val Ala Leu Thr Leu Arg Pro Gly Trp Pro Arg Gly Leu Phe
            195                     200                     205
Arg Leu Gly Lys Ala Leu Met Gly Leu Gln Arg Phe Arg Glu Ala Ala
            210                     215                     220
Ala Val Phe Gln Glu Thr Leu Arg Gly Gly Ser Gln Pro Asp Ala Ala
225                     230                     235                     240
Arg Glu Leu Arg Ser Cys Leu Leu His Leu Thr Leu Gln Gly Gln Arg
                245                     250                     255
Gly Gly Ile Cys Ala Pro Pro Leu Ser Pro Gly Ala Leu Gln Pro Leu
                260                     265                     270
Pro His Ala Glu Leu Ala Pro Ser
            275                     280
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<210> 4499
<211> 562
<212> DNA
<213> Homo sapiens
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<400> 4499
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gctcacagtc ctgccgatgc tgagatgggg gcccgacatg gcttgagccc cttgaatgtc
120
attgcggagg atgggaccat gacctccctc tgcggggact ggttgcaggg tcttcaccgg
180
tttgtggccc gggaaaagat aatgtctgtg ctgagtgaac ggggcctatt ccggggcctc
240
cagaaccacc ccatggtact gcccatctgc aggtaatctc attttaactc ctttactaag
300
ggctacccca aaagggaatg tatggagctt aagggtgaca ataggatggg ctctgcaccc
360
ctccgttaga atacgagctc cgtgtcggtt ttattcgcta ttgtatcctc agtaccaagg
420
gcctggcatg gcatggggtc ctgtgcccct gggagaagtc acagggccgg aagagcagtg
480
gactcaccct gtctctcttt cagccgttct ggggatgtga tagaatacct gctgaagaac
540
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cagtggtttg tccgctgcca cg
562


<210> 4500
<211> 91
<212> PRT
<213> Homo sapiens


<400> 4500
Xaa Ile Thr Asp Tyr Ala Val Gln Pro His Val Gly Thr Gly Ala Val
 1               5                  10                  15
Lys Val Thr Pro Ala His Ser Pro Ala Asp Ala Glu Met Gly Ala Arg
                20                  25                  30
His Gly Leu Ser Pro Leu Asn Val Ile Ala Glu Asp Gly Thr Met Thr
            35                  40                  45
Ser Leu Cys Gly Asp Trp Leu Gln Gly Leu His Arg Phe Val Ala Arg
        50                  55                  60
Glu Lys Ile Met Ser Val Leu Ser Glu Arg Gly Leu Phe Arg Gly Leu
65                  70                  75                  80
Gln Asn His Pro Met Val Leu Pro Ile Cys Arg
                85                  90


<210> 4501
<211> 1866
<212> DNA
<213> Homo sapiens


<400> 4501
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ccccaatacc tcagctagcc cccttcccca cttcttacac tccaaactca gccgggacag
120
acctctgctg ccgccgcccc cacgaacgtg tgacgacggc tggaggccaa cagagtccct
180
acaggtggtg ctcacggtaa tgcaccgaca atgagtggct gttttccagt ttctggcctc
240
cgctgcctat ctagggacgg caggatggcc gcgcagggcg cgccgcgctt cctcctgacc
300
ttcgacttcg acgagactat cgtggacgaa aacagcgacg attcgatcgt gcgcgccgcg
360
ccgggccagc ggctcccgga gagcctgcga gccacctacc gcgagggctt ctacaacgag
420
tacatgcagc gcgtcttcaa gtacctgggc gagcagggcg tgcggccgcg ggacctgagc
480
gccatctacg aagccatccc tttgtcgcca ggcatgagcg acctgctgca gtttgtggca
540
aaacagggcg cctgcttcga ggtgattctc atctccgatg ccaacacctt tggcgtggag
600
agctcgctgc gcgccgccgg ccaccacagc ctgttccgcc gcatcctcag caacccgtcg
660
gggccggatg cgcggggact gctggctctg cggccgttcc acacacacag ctgcgcgcgc
720
tgccccgcca acatgtgcaa gcacaaggtg ctcagcgact acctgcgcga gcgggcccac
780
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gacggcgtgc acttcgagcg cctcttctac gtgggtgatg gtgcaaatga cttctgcccc
840
atggggctgc tggcgggcgg cgacgtggcc ttcccgcgcc gcggctaccc catgcaccgc
900
ctcattcagg aggcccagaa ggccgagccc agctcgttcc gcgccagcgt ggtgccctgg
960
gaaacggctg cagatgtgcg cctccacctg caacaggtgc tgaagtcgtg ctgagtctgg
1020
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1260
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1380
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1440
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1560
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1620
cgcctcctgg tggtggtacg aggtagcgca ccgtccggct cgggtccgga cagccagtaa
1680
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1740
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1860
gtgttt
1866


<210> 4502
<211> 267
<212> PRT
<213> Homo sapiens

<400> 4502
Met Ser Gly Cys Phe Pro Val Ser Gly Leu Arg Cys Leu Ser Arg Asp
1               5                   10                  15
Gly Arg Met Ala Ala Gln Gly Ala Pro Arg Phe Leu Leu Thr Phe Asp
            20                  25                  30
Phe Asp Glu Thr Ile Val Asp Glu Asn Ser Asp Asp Ser Ile Val Arg
        35                  40                  45
Ala Ala Pro Gly Gln Arg Leu Pro Glu Ser Leu Arg Ala Thr Tyr Arg
    50                  55                  60
Glu Gly Phe Tyr Asn Glu Tyr Met Gln Arg Val Phe Lys Tyr Leu Gly
```

```
65                   70                  75                  80
Glu Gln Gly Val Arg Pro Arg Asp Leu Ser Ala Ile Tyr Glu Ala Ile
                85                  90                  95
Pro Leu Ser Pro Gly Met Ser Asp Leu Leu Gln Phe Val Ala Lys Gln
            100                 105                 110
Gly Ala Cys Phe Glu Val Ile Leu Ile Ser Asp Ala Asn Thr Phe Gly
        115                 120                 125
Val Glu Ser Ser Leu Arg Ala Ala Gly His His Ser Leu Phe Arg Arg
    130                 135                 140
Ile Leu Ser Asn Pro Ser Gly Pro Asp Ala Arg Gly Leu Leu Ala Leu
145                 150                 155                 160
Arg Pro Phe His Thr His Ser Cys Ala Arg Cys Pro Ala Asn Met Cys
                165                 170                 175
Lys His Lys Val Leu Ser Asp Tyr Leu Arg Glu Arg Ala His Asp Gly
                180                 185                 190
Val His Phe Glu Arg Leu Phe Tyr Val Gly Asp Gly Ala Asn Asp Phe
            195                 200                 205
Cys Pro Met Gly Leu Leu Ala Gly Gly Asp Val Ala Phe Pro Arg Arg
    210                 215                 220
Gly Tyr Pro Met His Arg Leu Ile Gln Glu Ala Gln Lys Ala Glu Pro
225                 230                 235                 240
Ser Ser Phe Arg Ala Ser Val Val Pro Trp Glu Thr Ala Ala Asp Val
                245                 250                 255
Arg Leu His Leu Gln Gln Val Leu Lys Ser Cys
                260                 265
```

<210> 4503
<211> 1983
<212> DNA
<213> Homo sapiens

<400> 4503

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agcctcggtt gcccggccgg ggacccgagc cgaaaagtta tcgtcagaat gtcgggcaaa
180
gaccgaattg aaatctttcc ctcgcgaatg gcacagacca tcatgaaggc tcgattaaag
240
ggagcacaga caggtcgaaa cctcctgaag aaaaaatctg atgccttaac tcttcgattt
300
cgacagatcc taaagaagat aatagagact aaaatgttga tgggcgaagt gatgagagaa
360
gctgcctttt cactagctga agccaagttc acagcaggtg acttcagcac tacagttatc
420
caaaatgtca ataaagcgca agtgaagatt cgagcgaaga aagataatgt agcaggtgtt
480
actttgccag tatttgaaca ttaccatgaa ggaactgaca gttatgaact gactggttta
540
gccagaggtg gggaacagtt ggctaaatta aagaggaatt atgccaaagc agtggaacta
600
ctggtggaac tagcttctct gcagacttct tttgttactt tggatgaagc tattaagata
660
```

```
accaacaggc gtgtaaatgc cattgaacat ggtgagtatg tcatcattcc ccggattgaa
720
cgtactcttg cttatatcat cacagagctg gatgagagag agcgagaaga gttctatagg
780
ttaaagaaaa tacaagagaa gaaaaagatt ctaaaggaaa aatctgagaa ggacttggag
840
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900
gaggatcttc tatttgaata atctttcctg ttctggttct ttgagaaacc ctaacactgg
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cttcatttta attcacagtg tgtaggtttg atttgtgtgg ctatttattt tttggcctaa
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gaatttcact ggttgtaaaa tttacctaga tgtctattta tgggattact tttgcagaat
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cataatttag caaccattta tcatggatga aagagatctg taaaacctgc ccaggaactt
1140
acagaattta ctttgcagaa gcgttatcat actccattta catctgtgtt acacgtgatc
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tgcttaccaa gcatattagg aaatacctct taggaagcat tagcggtctc aggccaatta
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1320
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1380
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1620
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1740
aaggtaactt tttactattt ataagtgata aaaacttgct ttcatatatg aagatgaagc
1800
atttgagtgg ccacatcagg tgtctgaggt ttttagtact gtttgatttg gcatgagcca
1860
tccatgggga ctcagtcttt ctcgcatcca tttccaggca tttttgacat gattagccat
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1980
gtg
1983


<210> 4504
<211> 250
<212> PRT
<213> Homo sapiens

<400> 4504Ser Gly Lys Asp Arg Ile Glu Ile Phe Pro Ser Arg Met Ala Gln
      1               5                   10                  15
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3686

```
Thr Ile Met Lys Ala Arg Leu Lys Gly Ala Gln Thr Gly Arg Asn Leu
            20                  25                  30
Leu Lys Lys Lys Ser Asp Ala Leu Thr Leu Arg Phe Arg Gln Ile Leu
        35                  40                  45
Lys Lys Ile Ile Glu Thr Lys Met Leu Met Gly Glu Val Met Arg Glu
    50                  55                  60
Ala Ala Phe Ser Leu Ala Glu Ala Lys Phe Thr Ala Gly Asp Phe Ser
65                  70                  75                  80
Thr Thr Val Ile Gln Asn Val Asn Lys Ala Gln Val Lys Ile Arg Ala
                85                  90                  95
Lys Lys Asp Asn Val Ala Gly Val Thr Leu Pro Val Phe Glu His Tyr
            100                 105                 110
His Glu Gly Thr Asp Ser Tyr Glu Leu Thr Gly Leu Ala Arg Gly Gly
            115                 120                 125
Glu Gln Leu Ala Lys Leu Lys Arg Asn Tyr Ala Lys Ala Val Glu Leu
    130                 135                 140
Leu Val Glu Leu Ala Ser Leu Gln Thr Ser Phe Val Thr Leu Asp Glu
145                 150                 155                 160
Ala Ile Lys Ile Thr Asn Arg Arg Val Asn Ala Ile Glu His Gly Glu
                165                 170                 175
Tyr Val Ile Ile Pro Arg Ile Glu Arg Thr Leu Ala Tyr Ile Ile Thr
            180                 185                 190
Glu Leu Asp Glu Arg Glu Arg Glu Glu Phe Tyr Arg Leu Lys Lys Ile
    195                 200                 205
Gln Glu Lys Lys Lys Ile Leu Lys Glu Lys Ser Glu Lys Asp Leu Glu
    210                 215                 220
Gln Arg Arg Ala Ala Gly Glu Val Leu Glu Pro Ala Asn Leu Leu Ala
225                 230                 235                 240
Glu Glu Lys Asp Glu Asp Leu Leu Phe Glu
            245                 250
```

```
<210> 4505
<211> 379
<212> DNA
<213> Homo sapiens

<400> 4505
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120
tggtggcttt ggctgtccag cctcagtaat cagatacatc ctacaccttc agcacagggc
180
caggcagcct tgaggcaaac atgtccccat ctcagggaat caggaccatt gagtgtgagg
240
catgtggccc tcctggccct ggagacagca tcacacccct cagggcccca cacgaaccag
300
gcccctagcc ctgcaacgtc tcctaaatgc ccctcagagc cagcaactcc atcttccaca
360
gattcactaa tcaagatct
379

<210> 4506
<211> 121
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```
<212> PRT
<213> Homo sapiens

<400> 4506
Met Pro Gly Gly Glu Pro Arg Leu Lys Met Leu Pro Thr Pro Val Pro
1               5                   10                  15
Gly Ser Leu Glu His Val Leu Gln Ser Asn Gln Arg Gln Lys Glu Arg
            20                  25                  30
Arg Arg Gln Trp Trp Leu Trp Leu Ser Ser Leu Ser Asn Gln Ile His
        35                  40                  45
Pro Thr Pro Ser Ala Gln Gly Gln Ala Ala Leu Arg Gln Thr Cys Pro
    50                  55                  60
His Leu Arg Glu Ser Gly Pro Leu Ser Val Arg His Val Ala Leu Leu
65                  70                  75                  80
Ala Leu Glu Thr Ala Ser His Pro Ser Gly Pro His Thr Asn Gln Ala
            85                  90                  95
Pro Ser Pro Ala Thr Ser Pro Lys Cys Pro Ser Glu Pro Ala Thr Pro
            100                 105                 110
Ser Ser Thr Asp Ser Leu Ile Lys Ile
            115                 120
```

```
<210> 4507
<211> 3664
<212> DNA
<213> Homo sapiens

<400> 4507
agcacttcct taaaaagaaa agtctagtaa cgaggccatc ccggcgtcag aagcggtcag
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gctgggtttg acaagatcag aaccgaaatg actacgaaag tgggaataca aggaggtgca
120
tttactacac attaacgttc agcgaactcc cacaatcttt aaacacacag ccattggaag
180
gacgatcttg agcaggaagg gtttttactc gttgtggtgc gctgtcttcc cgcttgcgtc
240
agggacctgc ccgactcagt ggccgccatg gcatcagatg aaggcaaact ttttgttgga
300
gggctgagtt ttgacaccaa tgagcagtcg ctggagcagg tcttctcaaa gtacggacag
360
atctctgaag tggtggttgt gaaagacagg gagacccaga gatctcgggg atttgggttt
420
gtcacctttg agaacattga cgacgctaag gatgccatga tggccatgaa tgggaagtct
480
gtagatggac ggcagatccg agtagaccag gcaggcaagt cgtcagacaa ccgatcccgt
540
gggtaccgtg gtggctctgc cggggggccgg ggcttcttcc gtgggggccg aggacggggc
600
cgtgggttct ctagaggagg aggggaccga ggctatgggg ggaaccggtt cgagtccagg
660
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720
agtgaccgga gctcgggcgg gtcctacaga gacagttacg acagttacgc tacacacaac
780
```

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gagtaaaaac ccttcctgct caagatcgtc cttccaatgg ctgtgtgttt aaagattgtg
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900
tcatttcggt tctgatcttg tcaaacccag cctgaccgct tctgacgccg ggatggcctc
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gttactagac ttttcttttt aaggaagtgc tgttttttttt tgagggtttt caaaacattt
1020
tgaaaagcat ttactttttt gaccacgagc catgagtttt caaaaaaatc gggggttgtg
1080
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ctttgtcgga agctgagcaa gctgtggctt ttttccaact ccgtgtgacg tttctgagtg
1260
tagtgtggta ggaccccggc gggtgtggca gcaactgccc tggagcccca gccctgcgt
1320
ccatctgtgc tgtgcgcccc acagtagacg tgcagacgtc cctgagaggt tcttgaagat
1380
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1860
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1980
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2160
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2400
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3540
ctgtgggtag cgccggggct caccaggcgg aagggggcc cggcgtcaag ctccgcctcc
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3660
cgcc
3664
```

```
<210> 4508
<211> 172
<212> PRT
<213> Homo sapiens
```

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<400> 4508
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  1               5                  10                  15
Thr Asn Glu Gln Ser Leu Glu Gln Val Phe Ser Lys Tyr Gly Gln Ile
```

```
            20                    25                    30
Ser Glu Val Val Val Val Lys Asp Arg Glu Thr Gln Arg Ser Arg Gly
        35                    40                    45
Phe Gly Phe Val Thr Phe Glu Asn Ile Asp Asp Ala Lys Asp Ala Met
        50                    55                    60
Met Ala Met Asn Gly Lys Ser Val Asp Gly Arg Gln Ile Arg Val Asp
65                    70                    75                    80
Gln Ala Gly Lys Ser Ser Asp Asn Arg Ser Arg Gly Tyr Arg Gly Gly
                85                    90                    95
Ser Ala Gly Gly Arg Gly Phe Phe Arg Gly Gly Arg Gly Arg Gly Arg
            100                   105                   110
Gly Phe Ser Arg Gly Gly Gly Asp Arg Gly Tyr Gly Gly Asn Arg Phe
            115                   120                   125
Glu Ser Arg Ser Gly Gly Tyr Gly Gly Ser Arg Asp Tyr Tyr Ser Ser
            130                   135                   140
Arg Ser Gln Ser Gly Gly Tyr Ser Asp Arg Ser Ser Gly Gly Ser Tyr
145                   150                   155                   160
Arg Asp Ser Tyr Asp Ser Tyr Ala Thr His Asn Glu
                165                   170
```

<210> 4509
<211> 11680
<212> DNA
<213> Homo sapiens

<400> 4509
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420
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720
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780
ggcatggccc tggttctcta caatgaaatt gaatatgcac aagcagctgt aaaagagacc
840
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960
ttagccgaaa gaagagagga acgaagggca tcctacgact ataaccaaga tcgtacatat
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2340
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2460
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2640
atggaacaga gtcgtaggaa acagcagatg gaaatggaaa tagccaagtc tgagaagttt
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2820
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2880
gaagattctg aaaggactgg tggttctccc agtgtccgac atggttcctt ccatgaagat
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Ala Thr Arg Thr Leu Phe Ile Gly Asn Leu Glu Lys Thr Thr Thr Tyr
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His Asp Leu Arg Asn Ile Phe Gln Arg Phe Gly Glu Ile Val Asp Ile
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Asp Ile Lys Lys Val Asn Gly Val Pro Gln Tyr Ala Phe Leu Gln Tyr
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Thr Asn Cys Val Trp Leu Asp Gly Leu Ser Ser Asn Val Ser Asp Gln
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Tyr Leu Thr Arg His Phe Cys Arg Tyr Gly Pro Val Val Lys Val Val
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Phe Asp Arg Leu Lys Gly Met Ala Leu Val Leu Tyr Asn Glu Ile Glu
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Tyr Ala Gln Ala Ala Val Lys Glu Thr Lys Gly Arg Lys Ile Gly Gly
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                1365                1370                1375
Thr Ala Asp Ala Glu Pro Asp Ala Asn Gln Lys Ala Glu Ala Ala Pro
            1380                1385                1390
Glu Ser Gln Pro Pro Ala Ser Glu Asp Leu Glu Val Asp Pro Pro Val
            1395                1400                1405
Ala Ala Lys Asp Lys Lys Pro Asn Lys Ser Lys Arg Ser Lys Thr Pro
            1410                1415                1420
Val Gln Ala Ala Ala Val Ser Ile Val Glu Lys Pro Val Thr Arg Lys
1425                1430                1435                1440
Ser Glu Arg Ile Asp Arg Glu Lys Leu Lys Arg Ser Asn Ser Pro Arg
                1445                1450                1455
Gly Glu Ala Gln Lys Leu Leu Glu Leu Lys Met Glu Ala Glu Lys Ile
            1460                1465                1470
Thr Arg Thr Ala Ser Lys Asn Ser Ala Ala Asp Leu Glu His Pro Glu
            1475                1480                1485
Pro Ser Leu Pro Leu Ser Arg Thr Arg Arg Arg Asn Val Arg Ser Val
            1490                1495                1500
Tyr Ala Thr Met Gly Asp His Glu Asn Arg Ser Pro Val Lys Glu Pro
1505                1510                1515                1520
Val Glu Gln Pro Arg Val Thr Arg Lys Arg Leu Glu Arg Glu Leu Gln
            1525                1530                1535
Glu Ala Ala Ala Val Pro Thr Thr Pro Arg Arg Gly Arg Pro Pro Lys
            1540                1545                1550
Thr Arg Arg Arg Ala Asp Glu Glu Glu Glu Asn Glu Ala Lys Glu Pro
            1555                1560                1565
Ala Glu Thr Leu Lys Pro Pro Glu Gly Trp Arg Ser Pro Arg Ser Gln
            1570                1575                1580
Lys Thr Ala Ala Gly Gly Gly Pro Gln Gly Lys Lys Gly Lys Asn Glu
1585                1590                1595                1600
Pro Lys Val Asp Ala Thr Arg Pro Glu Ala Thr Thr Glu Val Gly Pro
                1605                1610                1615
Gln Ile Gly Val Lys Glu Ser Ser Met Glu Pro Lys Ala Ala Glu Glu
            1620                1625                1630
Glu Ala Gly Ser Glu Gln Lys Arg Asp Arg Lys Asp Ala Gly Thr Asp
            1635                1640                1645
Lys Asn Pro Pro Glu Thr Ala Pro Val Glu Val Val Glu Lys Lys Pro
            1650                1655                1660
Ala Pro Glu Lys Asn Ser Lys Ser Lys Arg Gly Arg Ser Arg Asn Ser
1665                1670                1675                1680
Arg Leu Ala Val Asp Lys Ser Ala Ser Leu Lys Asn Val Asp Ala Ala
                1685                1690                1695
Val Ser Pro Arg Gly Ala Ala Ala Gln Ala Gly Glu Arg Glu Ser Gly
            1700                1705                1710
Val Val Ala Val Ser Pro Glu Lys Ser Glu Ser Pro Gln Lys Glu Asp
            1715                1720                1725
Gly Leu Ser Ser Gln Leu Lys Ser Asp Pro Val Asp Pro Asp Lys Glu
            1730                1735                1740
Pro Glu Lys Glu Asp Val Ser Ala Ser Gly Pro Ser Pro Glu Ala Thr
1745                1750                1755                1760
Gln Leu Ala Lys Gln Met Glu Leu Glu Gln Ala Val Glu His Ile Ala
                1765                1770                1775
Lys Leu Ala Glu Ala Ser Ala Ser Ala Ala Tyr Lys Ala Asp Ala Pro
            1780                1785                1790
Glu Gly Leu Ala Pro Glu Asp Arg Asp Lys Pro Ala His Gln Ala Ser
```

```
         1795                1800                1805
Glu Thr Glu Leu Ala Ala Ala Ile Gly Ser Ile Ile Asn Asp Ile Ser
    1810                1815                1820
Gly Glu Pro Glu Asn Phe Pro Ala Pro Pro Pro Tyr Pro Gly Glu Ser
1825                1830                1835                1840
Gln Thr Asp Leu Gln Pro Pro Ala Gly Ala Gln Ala Leu Gln Pro Ser
            1845                1850                1855
Glu Glu Gly Met Glu Thr Asp Glu Ala Val Ser Gly Ile Leu Glu Thr
        1860                1865                1870
Glu Ala Ala Thr Glu Ser Ser Arg Pro Pro Val Asn Ala Pro Asp Pro
        1875                1880                1885
Ser Ala Gly Pro Thr Asp Thr Lys Glu Ala Arg Gly Asn Ser Ser Glu
    1890                1895                1900
Thr Ser His Ser Val Pro Glu Ala Lys Gly Ser Lys Glu Val Glu Val
1905                1910                1915                1920
Thr Leu Val Arg Lys Asp Lys Gly Arg Gln Lys Thr Thr Arg Ser Arg
            1925                1930                1935
Arg Lys Arg Asn Thr Asn Lys Lys Val Val Ala Pro Val Glu Ser His
            1940                1945                1950
Val Pro Glu Ser Asn Gln Ala Gln Gly Glu Ser Pro Ala Ala Asn Glu
        1955                1960                1965
Gly Thr Thr Val Gln His Pro Glu Ala Pro Gln Glu Glu Lys Gln Ser
    1970                1975                1980
Glu Lys Pro His Ser Thr Pro Pro Gln Ser Cys Thr Ser Asp Leu Ser
1985                1990                1995                2000
Lys Ile Pro Ser Thr Glu Asn Ser Ser Gln Glu Ile Ser Val Glu Glu
            2005                2010                2015
Arg Thr Pro Thr Lys Ala Ser Val Pro Pro Asp Leu Pro Pro Pro Pro
            2020                2025                2030
Gln Pro Ala Pro Val Asp Glu Glu Pro Gln Ala Arg Phe Arg Val His
        2035                2040                2045
Ser Ile Ile Glu Ser Asp Pro Val Thr Pro Pro Ser Asp Pro Ser Ile
    2050                2055                2060
Pro Ile Pro Thr Leu Pro Ser Val Thr Ala Ala Lys Leu Ser Pro Pro
2065                2070                2075                2080
Val Ala Ser Gly Gly Ile Pro His Gln Ser Pro Pro Thr Lys Val Thr
            2085                2090                2095
Glu Trp Ile Thr Arg Gln Glu Glu Pro Arg Ala Gln Ser Thr Pro Ser
            2100                2105                2110
Pro Ala Leu Pro Pro Asp Thr Lys Ala Ser Asp Val Asp Thr Ser Ser
        2115                2120                2125
Ser Thr Leu Arg Lys Ile Leu Met Asp Pro Lys Tyr Val Ser Ala Thr
    2130                2135                2140
Ser Val Thr Ser Thr Ser Val Thr Thr Ala Ile Ala Glu Pro Val Ser
2145                2150                2155                2160
Ala Ala Pro Cys Leu His Glu Ala Pro Pro Pro Val Asp Ser Lys
2165                2170                2175
Lys Pro Leu Glu Glu Lys Thr Ala Pro Pro Val Thr Asn Asn Ser Glu
            2180                2185                2190
Ile Gln Ala Ser Glu Val Leu Val Ala Ala Asp Lys Glu Lys Val Ala
        2195                2200                2205
Pro Val Ile Ala Pro Lys Ile Thr Ser Val Ile Ser Arg Met Pro Val
    2210                2215                2220
Ser Ile Asp Leu Glu Asn Ser Gln Lys Ile Thr Leu Ala Lys Pro Ala
```

```
      2225                2230                2235                2240
Pro Gln Thr Leu Thr Gly Leu Val Ser Ala Leu Thr Gly Leu Val Asn
                2245                2250                2255
Val Ser Leu Val Pro Val Asn Ala Leu Lys Gly Pro Val Lys Gly Ser
           2260                2265                2270
Val Thr Thr Leu Lys Ser Leu Val Ser Thr Pro Ala Gly Pro Val Asn
           2275                2280                2285
Val Leu Lys Gly Pro Val Asn Val Leu Thr Gly Pro Val Asn Val Leu
      2290                2295                2300
Thr Thr Pro Val Asn Ala Thr Val Gly Thr Val Asn Ala Ala Pro Gly
2305                2310                2315                2320
Thr Val Asn Ala Ala Ala Ser Ala Val Asn Ala Thr Ala Ser Ala Val
                2325                2330                2335
Thr Val Thr Ala Gly Ala Val Thr Ala Ala Ser Gly Gly Val Thr Ala
           2340                2345                2350
Thr Thr Gly Thr Val Thr Met Ala Gly Ala Val Ile Ala Pro Ser Thr
           2355                2360                2365
Lys Cys Lys Gln Arg Ala Ser Ala Asn Glu Asn Ser Arg Phe His Pro
      2370                2375                2380
Gly Ser Met Pro Val Ile Asp Asp Arg Pro Ala Asp Ala Gly Ser Gly
2385                2390                2395                2400
Ala Gly Leu Arg Val Asn Thr Ser Glu Gly Val Val Leu Leu Ser Tyr
                2405                2410                2415
Ser Gly Gln Lys Thr Glu Gly Pro Gln Arg Ile Ser Ala Lys Ile Ser
           2420                2425                2430
Gln Ile Pro Pro Ala Ser Ala Met Asp Ile Glu Phe Gln Gln Ser Val
           2435                2440                2445
Ser Lys Ser Gln Val Lys Pro Asp Ser Val Thr Ala Ser Gln Pro Pro
      2450                2455                2460
Ser Lys Gly Pro Gln Ala Pro Ala Gly Tyr Ala Asn Val Ala Thr His
2465                2470                2475                2480
Ser Thr Leu Val Leu Thr Ala Gln Thr Tyr Asn Ala Ser Pro Val Ile
                2485                2490                2495
Ser Ser Val Lys Ala Asp Arg Pro Ser Leu Glu Lys Pro Glu Pro Ile
           2500                2505                2510
His Leu Ser Val Ser Thr Pro Val Thr Gln Gly Gly Thr Val Lys Val
      2515                2520                2525
Leu Thr Gln Gly Ile Asn Thr Pro Pro Val Leu Val His Asn Gln Leu
      2530                2535                2540
Val Leu Thr Pro Ser Ile Val Thr Thr Asn Lys Lys Leu Ala Asp Pro
2545                2550                2555                2560
Val Thr Leu Lys Ile Glu Thr Lys Val Leu Gln Pro Ala Asn Leu Gly
                2565                2570                2575
Ser Thr Leu Thr Pro His His Pro Pro Ala Leu Pro Ser Lys Leu Pro
           2580                2585                2590
Thr Glu Val Asn His Val Pro Ser Gly Pro Ser Ile Pro Ala Asp Arg
      2595                2600                2605
Thr Val Ser His Leu Ala Ala Ala Lys Leu Asp Ala His Ser Pro Arg
      2610                2615                2620
Pro Ser Gly Pro Gly Pro Ser Ser Phe Pro Arg Ala Ser His Pro Ser
2625                2630                2635                2640
Ser Thr Ala Ser Thr Ala Leu Ser Thr Asn Ala Thr Val Met Leu Ala
                2645                2650                2655
Ala Gly Ile Pro Val Pro Gln Phe Ile Ser Ser Ile His Pro Glu Gln
```

```
                2660                2665                2670
    Ser Val Ile Met Pro Pro His Ser Ile Thr Gln Thr Val Ser Leu Ser
          2675                2680                2685
    His Leu Ser Gln Gly Glu Val Arg Met Asn Thr Pro Thr Leu Pro Ser
          2690                2695                2700
    Ile Thr Tyr Ser Ile Arg Pro Glu Ala Leu His Ser Pro Arg Ala Pro
    2705                2710                2715                2720
    Leu Gln Pro Gln Gln Ile Glu Val Arg Ala Pro Gln Arg Ala Ser Thr
                2725                2730                2735
    Pro Gln Pro Ala Pro Ala Gly Val Pro Ala Leu Ala Ser Gln His Pro
                2740                2745                2750
    Pro Glu Glu Glu Val His Tyr His Leu Pro Val Ala Arg Ala Thr Ala
                2755                2760                2765
    Pro Val Gln Ser Glu Val Leu Val Met Gln Ser Glu Tyr Arg Leu His
          2770                2775                2780
    Pro Tyr Thr Val Pro Arg Asp Val Arg Ile Met Val His Pro His Val
    2785                2790                2795                2800
    Thr Ala Val Ser Glu Gln Pro Arg Ala Ala Asp Gly Val Val Lys Val
                2805                2810                2815
    Pro Pro Ala Ser Lys Ala Pro Gln Gln Pro Gly Lys Glu Ala Ala Lys
                2820                2825                2830
    Thr Pro Asp Ala Lys Ala Ala Pro Thr Pro Thr Pro Ala Pro Val Pro
                2835                2840                2845
    Val Pro Val Pro Leu Pro Ala Pro Ala Pro His Gly Glu Ala
          2850                2855                2860
    Arg Ile Leu Thr Val Thr Pro Ser Asn Gln Leu Gln Gly Leu Pro Leu
    2865                2870                2875                2880
    Thr Pro Pro Val Val Val Thr His Gly Val Gln Ile Val His Ser Ser
                2885                2890                2895
    Gly Glu Leu Phe Gln Glu Tyr Arg Tyr Gly Asp Ile Arg Thr Tyr His
          2900                2905                2910
    Pro Pro Ala Gln Leu Thr His Thr Gln Phe Pro Ala Ala Ser Ser Val
          2915                2920                2925
    Gly Leu Pro Ser Arg Thr Lys Thr Ala Ala Gln Gly Pro Pro Pro Glu
          2930                2935                2940
    Gly Glu Pro Leu Gln Pro Pro Gln Pro Val Gln Ser Thr Gln Pro Ala
    2945                2950                2955                2960
    Gln Pro Ala Pro Pro Cys Pro Pro Ser Gln Leu Gly Gln Pro Gly Gln
                2965                2970                2975
    Pro Pro Ser Ser Lys Met Pro Gln Val Ser Gln Glu Ala Lys Gly Thr
          2980                2985                2990
    Gln Thr Gly Val Glu Gln Pro Arg Leu Pro Ala Gly Pro Ala Asn Arg
          2995                3000                3005
    Pro Pro Glu Pro His Thr Gln Val Gln Arg Ala Gln Ala Glu Thr Gly
          3010                3015                3020
    Pro Thr Ser Phe Pro Ser Pro Val Ser Val Ser Met Lys Pro Asp Leu
    3025                3030                3035                3040
    Pro Val Ser Leu Pro Thr Gln Thr Ala Pro Lys Gln Pro Leu Phe Val
                3045                3050                3055
    Pro Thr Thr Ser Gly Pro Ser Thr Pro Pro Gly Leu Val Leu Pro His
                3060                3065                3070
    Thr Glu Phe Gln Pro Ala Pro Lys Gln Asp Ser Ser Pro His Leu Thr
          3075                3080                3085
    Ser Gln Arg Pro Val Asp Met Val Gln Leu Leu Lys Lys Tyr Pro Ile
```

```
        3090              3095              3100
Val Trp Gln Gly Leu Leu Ala Leu Lys Asn Asp Thr Ala Ala Val Gln
3105              3110              3115              3120
Leu His Phe Val Ser Gly Asn Asn Val Leu Ala His Arg Ser Leu Pro
            3125              3130              3135
Leu Ser Glu Gly Gly Pro Pro Leu Arg Ile Ala Gln Arg Met Arg Leu
        3140              3145              3150
Glu Ala Thr Gln Leu Glu Gly Val Ala Arg Arg Met Thr Leu Ala Ser
        3155              3160              3165
Ala Ser Val Glu Thr Asp Tyr Cys Leu Leu Leu Ala Leu Pro Cys Gly
        3170              3175              3180
Arg Asp Gln Glu Asp Val Val Ser Gln Thr Glu Ser Leu Lys Ala Ala
3185              3190              3195              3200
Phe Ile Thr Tyr Leu Gln Ala Lys Gln Ala Ala Gly Ile Ile Asn Val
            3205              3210              3215
Pro Asn Pro Gly Ser Asn Gln Pro Ala Tyr Val Leu Gln Ile Phe Pro
        3220              3225              3230
Pro Cys Glu Phe Ser Glu Ser His Leu Ser Arg Leu Ala Pro Asp Leu
        3235              3240              3245
Leu Ala Ser Ile Ser Asn Ile Ser Pro His Leu Met Ile Val Ile Ala
        3250              3255              3260
Ser Val
3265


<210> 4511
<211> 1375
<212> DNA
<213> Homo sapiens

<400> 4511
gctggtcgga ccaggtctct tcccatcact attgaaatgc taaaagttcc agacgatgaa
60
gaagaagagg agcaaacctg tccatccaca ttcagtgaag aaatgacacc tacctcagtc
120
attcctaaat taccacagtg tctacgggag gaagaagaga aggagagcga ctctgattca
180
gaaggtccca ttcagtaccg agatgaagaa gatgaagatg aaagctatca gagtgcactc
240
gccaacaaag tgaagaggaa agacacactg gcaatgaagt tgaaccacag acccagtgaa
300
ccagagttga acctgaattc ttggccttgt aaaagcaagg aggagtggaa tgaaatacgg
360
caccagattg gaaacacact gatccggcga ctgagtcaaa gaccaacacc agaagaacta
420
gaacaacgca atatattgca acctaaaaat gaagctgatc gtcaggcaga aaaacgagaa
480
attaaacgtc ggctcactag aaagctcagt caaaggccaa ctgtcgctga actccttgcc
540
aggaagattc tgaggtttaa tgaatatgta gaggtaacag atgctcaaga ttatgaccgg
600
cgagccgaca aaccttggac caaactgacc cctgctgaca aggctgccat aagaaaagaa
660
ttaaatgaat ttaaaagctc cgagatggag gttcatgaag agagcaaaca ttttacacgc
720
```

```
taccatcgtc catgatgcca aaggttgaga gaggaatcaa catggctgct ttgctgcttc
780
cttctccaaa gtgacatatg gagggaactt tagcacttcc cagcacagcc agaattgcat
840
cctctgggat cttctgaggt ggacagcact ttgaatgtag catttcactg gaacagagtc
900
ttatgtgctg caccgggggc aaaacaacac tttgtcagtg cttttgaacc tttcaatatt
960
gtagcatgct tgaggagttt ttcccttact ggccaccaaa gttctgaacc acttgcaggt
1020
tccaggtttt actggctgca ccacacccct tccctagat gactgcctgt gcagagacac
1080
agtttgcacc attagcctta cctgccctgc cctgattgtg agacccaaat gtgtaggctc
1140
taaattccag ccatcaaatc caattcctgg tggggaaaac cttctggaga cccccaacct
1200
tctgataaaa gagtctctac ctccagggaa agccttctta ccacactggc atatcagatg
1260
aaagcattgc actgtacctc tcgtaacaca gcaatacagt cctcttgagg cactcaagcc
1320
tgagaggaag ctcaggatct gacatgttct tccttttcct cacaagtcat catga
1375


<210> 4512
<211> 244
<212> PRT
<213> Homo sapiens

<400> 4512
Ala Gly Arg Thr Arg Ser Leu Pro Ile Thr Ile Glu Met Leu Lys Val
 1               5                  10                  15
Pro Asp Asp Glu Glu Glu Glu Glu Gln Thr Cys Pro Ser Thr Phe Ser
            20                  25                  30
Glu Glu Met Thr Pro Thr Ser Val Ile Pro Lys Leu Pro Gln Cys Leu
        35                  40                  45
Arg Glu Glu Glu Glu Lys Glu Ser Asp Ser Asp Ser Glu Gly Pro Ile
    50                  55                  60
Gln Tyr Arg Asp Glu Glu Asp Glu Asp Glu Ser Tyr Gln Ser Ala Leu
65                  70                  75                  80
Ala Asn Lys Val Lys Arg Lys Asp Thr Leu Ala Met Lys Leu Asn His
            85                  90                  95
Arg Pro Ser Glu Pro Glu Leu Asn Leu Asn Ser Trp Pro Cys Lys Ser
            100                 105                 110
Lys Glu Glu Trp Asn Glu Ile Arg His Gln Ile Gly Asn Thr Leu Ile
        115                 120                 125
Arg Arg Leu Ser Gln Arg Pro Thr Pro Glu Glu Leu Glu Gln Arg Asn
    130                 135                 140
Ile Leu Gln Pro Lys Asn Glu Ala Asp Arg Gln Ala Glu Lys Arg Glu
145                 150                 155                 160
Ile Lys Arg Arg Leu Thr Arg Lys Leu Ser Gln Arg Pro Thr Val Ala
            165                 170                 175
Glu Leu Leu Ala Arg Lys Ile Leu Arg Phe Asn Glu Tyr Val Glu Val
            180                 185                 190
Thr Asp Ala Gln Asp Tyr Asp Arg Arg Ala Asp Lys Pro Trp Thr Lys
```

```
            195              200              205
Leu Thr Pro Ala Asp Lys Ala Ala Ile Arg Lys Glu Leu Asn Glu Phe
    210              215              220
Lys Ser Ser Glu Met Glu Val His Glu Glu Ser Lys His Phe Thr Arg
225              230              235              240
Tyr His Arg Pro
```

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<210> 4513
<211> 545
<212> DNA
<213> Homo sapiens

<400> 4513
aagctttact acacagctac agtaatggag acagcaggta ccgctctaca gcaaaagacc
60
tgcatcaccg agtccacgca cacttgcctt gcagcttcat gtcagagagc agctgagcag
120
tcagcacctg cacccggggg ttgggccctg gggcttcctt cccagtccag cctctcagct
180
cctgtctgtg gcttagcacg tgcaccacag agccaaccag atcctctgta aactttggga
240
cttctctggc cttcacggga ccttctgtgg cagaaatcat tttcataatc atgagactct
300
tctcctcgga gtttccttc aacaggtggg acatggatgc tgtgaactgc tcctgggaca
360
cgttctcact gggtcccttc gccttccctg tcaggtcgac cctccgcatg ccatcataca
420
gcctggtgac catctctggg ggaagagctt ccccgacgtg gttctgtagt gccttcagag
480
agaaggattt ggatgagaca ttcgggctgt ttttatctga tgacagagca tcaaacaatt
540
gatca
545
```

```
<210> 4514
<211> 122
<212> PRT
<213> Homo sapiens

<400> 4514
Met Val Thr Arg Leu Tyr Asp Gly Met Arg Arg Val Asp Leu Thr Gly
  1           5              10              15
Lys Ala Lys Gly Pro Ser Glu Asn Val Ser Gln Glu Gln Phe Thr Ala
            20              25              30
Ser Met Ser His Leu Leu Lys Gly Asn Ser Glu Glu Lys Ser Leu Met
            35              40              45
Ile Met Lys Met Ile Ser Ala Thr Glu Gly Pro Val Lys Ala Arg Glu
    50              55              60
Val Gln Lys Phe Thr Glu Asp Leu Val Gly Ser Val Val His Val Leu
65              70              75              80
Ser His Arg Gln Glu Leu Arg Gly Trp Thr Gly Lys Glu Ala Pro Gly
            85              90              95
Pro Asn Pro Arg Val Gln Val Leu Thr Ala Gln Leu Leu Ser Asp Met
```

```
              100              105              110
Lys Leu Gln Gly Lys Cys Ala Trp Thr Arg
        115              120


<210> 4515
<211> 3207
<212> DNA
<213> Homo sapiens


<400> 4515
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60
actccccccg cgcggttgct gggaacccgg aggccgcccg ggcggagcgc ggagggcgcg
120
tcggaacctg gccggggccc tccacccgcg ccgtggtccc ggtggttgcg ccccgtggcg
180
agcgacgccg acaactttgc gatggagttt gtgcgggcgc tgtggctggg cctggcgctg
240
gcgctggggc cggggtccgc ggggggccac cctcagccgt gcggcgtcct ggcgcgcctc
300
gggggctccg tgcgcctggg cgccctcctg ccccgcgcgc ctctcgcccg cgcccgcgcc
360
cgcgccgccc tggcccgggc cgccctggcg ccgcggctgc cgcacaacct gagcttggag
420
ctggtggtcg ccgcgccccc cgcccgcgac cccgcctcgc tgacccgcgg cctgtgccag
480
gcgctggtgc ctccgggcgt ggcggccctg ctcgcctttc ccgaggctcg gcccgagctg
540
ctgcagctgc acttcctggc ggcggccacc gagaccccccg tgctcagcct gctgcggcgg
600
gaggcgcgcg cgcccctcgg agccccgaac ccattccacc tgcagctgca ctgggccagc
660
cccctggaga cgctgctgga tgtgctggtg gcggtgctgc aggcgcacgc ctgggaagac
720
gtcggcctgg ccctgtgccg cactcaggac cccggcggcc tggtggccct ctggacaagc
780
cgggctggcc ggcccccaca gctggtcctg gacctaagcc ggcgggacac gggagatgca
840
ggactgcggg cacgcctggc cccgatggcg cgccagtgg ggggtgaagc accggtaccc
900
gcggcggtcc tcctcggctg tgacatcgcc cgtgcccgtc gggtgctgga ggccgtacct
960
cccggccccc actggctgtt ggggacacca ctgccgccca aggccctgcc caccgcgggg
1020
ctgccaccag ggctgctggc gctgggcgag gtggcacgac ccccgctgga ggccgccatc
1080
catgacattg tgcaactggt ggcccgggcg ctgggcagtg cggcccaggt gcagccgaag
1140
cgagccctcc tccccgcccc ggtcaactgc ggggacctgc agccggccgg gcccgagtcc
1200
ccggggcgct tcttggcacg gttcctggcc aacacgtcct tccagggccg cacgggcccc
1260
gtgtgggtga caggcagctc ccaggtacac atgtctcggc actttaaggt gtggagcctt
1320
```

```
cgccgggacc cacggggcgc cccggcctgg gccacggtgg gcagctggcg gtacggccag
1380
ctggacttgg aaccgggagg tgcctctgca tggcccccgc ccccgcaggg tgcccaggtc
1440
cggcccaagc tgcgtgtggt aacgctgttg gaacacccat ttgtgtttgc ccgtgatcca
1500
gacgaagacg ggcagtgccc agcagggcag ctgtgcctgg accccggcac caacgactcg
1560
gccaccctgg acgcactgtt cgccgcgctg gccaacggct cagcgccccg tgccctgcgc
1620
aagtgctgct acggctactg cattgacctg ctggagcggc tggcggagga cacgcccttc
1680
gacttcgagc tgtacctcgt gggtgacggc aagtacggcg ccctgcggga cggccgctgg
1740
accggcctgg tcggggacct gctggccggc cgggcccaca tggcggtcac cagcttcagt
1800
atcaactccg cccgctcaca ggtggtggac ttcaccagcc ccttcttctc caccagcctg
1860
ggcatcatgg tgcgggcacg ggacacggcc tcacccatcg gtgcctttat gtggcccctg
1920
cactggtcca cgtggctggg cgtctttgcg gccctgcacc tcaccgcgct cttcctcacc
1980
gtgtacgagt ggcgtagccc ctacggcctc acgccacgtg gccgcaaccg cagcaccgtc
2040
ttctcctact cctcagccct caacctgtgc tacgccatcc tcttcagacg caccgtgtcc
2100
agcaagacgc ccaagtgccc cacgggccgc ctgctcatga acctctgggc catcttctgc
2160
ctgctggtgc tgtccagcta cacggccaac ctggctgccg tcatggtcgg ggacaagacc
2220
ttcgaggagc tgtcggggat ccacgacccc aagctgcacc acccggcgca gggcttccgc
2280
ttcggcaccg tgtgggagag cagcgccgag gcgtacatca agaagagctt ccccgacatg
2340
cacgcacaca tgcggcgcca cagcgcgccc accacgcccc gcggcgtcgc catgctcacg
2400
agcgacccccc ccaagctcaa cgccttcatc atggacaagt cgctcctgga ctacgaggtc
2460
tccatcgacg ccgactgcaa actgctgacc gtgggaaagc ccttcgccat tgagggctat
2520
gggatcggac tgccccagaa ctcgccgctc acctccaacc tgtccgagtt catcagccgc
2580
tacaagtcct ccggcttcat cgacctgctc cacgacaagt ggtacaagat ggtgccttgc
2640
ggcaagcggg tctttgcggt tacagagacc ctgcagatga gcatctacca cttcgcgggc
2700
ctcttcgtgt tgctgtgcct gggcctgggc agcgctctgc tcagctcgct gggcgagcac
2760
gccttcttcc gcctggcgct gccgcgcatc cgcaagggga gcaggctgca gtactggctg
2820
cacaccagcc agaaaatcca ccgcgccctc aacacggagc caccagaggg gtcgaaggag
2880
gagacggcag aggcggagcc caggtaagtg gtggtcgggg cggaccacga tgcaggacca
2940
```

```
cccagaccca ccaccccacc agctcgcccc gaagccggcc gcggggtgca ggaggttccc
3000
ggaggtcccc cgcccacccc cggacgtgca caccgtggct ccctggttgt gcctgtcggc
3060
catcctctgc cgtcagcggc ctctgcagag gcccagggcg cgagacggct gccccggcgg
3120
acactgacca ggccggttcc gtccccagcg gccccgaggt ggagcagcag cagcagcagc
3180
aggaccagcc aacggctccg gagggct
3207
```

```
<210> 4516
<211> 901
<212> PRT
<213> Homo sapiens
```

```
<400> 4516
Met Glu Phe Val Arg Ala Leu Trp Leu Gly Leu Ala Leu Ala Leu Gly
1               5                   10                  15
Pro Gly Ser Ala Gly Gly His Pro Gln Pro Cys Gly Val Leu Ala Arg
            20                  25                  30
Leu Gly Gly Ser Val Arg Leu Gly Ala Leu Leu Pro Arg Ala Pro Leu
            35                  40                  45
Ala Arg Ala Arg Ala Arg Ala Ala Leu Ala Arg Ala Ala Leu Ala Pro
        50                  55                  60
Arg Leu Pro His Asn Leu Ser Leu Glu Leu Val Ala Ala Pro Pro
65                  70                  75                  80
Ala Arg Asp Pro Ala Ser Leu Thr Arg Gly Leu Cys Gln Ala Leu Val
                85                  90                  95
Pro Pro Gly Val Ala Ala Leu Leu Ala Phe Pro Glu Ala Arg Pro Glu
            100                 105                 110
Leu Leu Gln Leu His Phe Leu Ala Ala Ala Thr Glu Thr Pro Val Leu
            115                 120                 125
Ser Leu Leu Arg Arg Glu Ala Arg Ala Pro Leu Gly Ala Pro Asn Pro
        130                 135                 140
Phe His Leu Gln Leu His Trp Ala Ser Pro Leu Glu Thr Leu Leu Asp
145                 150                 155                 160
Val Leu Val Ala Val Leu Gln Ala His Ala Trp Glu Asp Val Gly Leu
                165                 170                 175
Ala Leu Cys Arg Thr Gln Asp Pro Gly Gly Leu Val Ala Leu Trp Thr
            180                 185                 190
Ser Arg Ala Gly Arg Pro Pro Gln Leu Val Leu Asp Leu Ser Arg Arg
            195                 200                 205
Asp Thr Gly Asp Ala Gly Leu Arg Ala Arg Leu Ala Pro Met Ala Ala
        210                 215                 220
Pro Val Gly Gly Glu Ala Pro Val Pro Ala Ala Val Leu Leu Gly Cys
225                 230                 235                 240
Asp Ile Ala Arg Ala Arg Arg Val Leu Glu Ala Val Pro Pro Gly Pro
                245                 250                 255
His Trp Leu Leu Gly Thr Pro Leu Pro Pro Lys Ala Leu Pro Thr Ala
            260                 265                 270
Gly Leu Pro Pro Gly Leu Leu Ala Leu Gly Glu Val Ala Arg Pro Pro
            275                 280                 285
Leu Glu Ala Ala Ile His Asp Ile Val Gln Leu Val Ala Arg Ala Leu
```

```
          290                    295                    300
Gly Ser Ala Ala Gln Val Gln Pro Lys Arg Ala Leu Leu Pro Ala Pro
305                    310                    315                    320
Val Asn Cys Gly Asp Leu Gln Pro Ala Gly Pro Glu Ser Pro Gly Arg
              325                    330                    335
Phe Leu Ala Arg Phe Leu Ala Asn Thr Ser Phe Gln Gly Arg Thr Gly
              340                    345                    350
Pro Val Trp Val Thr Gly Ser Ser Gln Val His Met Ser Arg His Phe
              355                    360                    365
Lys Val Trp Ser Leu Arg Arg Asp Pro Arg Gly Ala Pro Ala Trp Ala
    370                    375                    380
Thr Val Gly Ser Trp Arg Tyr Gly Gln Leu Asp Leu Glu Pro Gly Gly
385                    390                    395                    400
Ala Ser Ala Trp Pro Pro Pro Pro Gln Gly Ala Gln Val Arg Pro Lys
              405                    410                    415
Leu Arg Val Val Thr Leu Leu Glu His Pro Phe Val Phe Ala Arg Asp
              420                    425                    430
Pro Asp Glu Asp Gly Gln Cys Pro Ala Gly Gln Leu Cys Leu Asp Pro
              435                    440                    445
Gly Thr Asn Asp Ser Ala Thr Leu Asp Ala Leu Phe Ala Ala Leu Ala
    450                    455                    460
Asn Gly Ser Ala Pro Arg Ala Leu Arg Lys Cys Cys Tyr Gly Tyr Cys
465                    470                    475                    480
Ile Asp Leu Leu Glu Arg Leu Ala Glu Asp Thr Pro Phe Asp Phe Glu
              485                    490                    495
Leu Tyr Leu Val Gly Asp Gly Lys Tyr Gly Ala Leu Arg Asp Gly Arg
              500                    505                    510
Trp Thr Gly Leu Val Gly Asp Leu Leu Ala Gly Arg Ala His Met Ala
              515                    520                    525
Val Thr Ser Phe Ser Ile Asn Ser Ala Arg Ser Gln Val Val Asp Phe
    530                    535                    540
Thr Ser Pro Phe Phe Ser Thr Ser Leu Gly Ile Met Val Arg Ala Arg
545                    550                    555                    560
Asp Thr Ala Ser Pro Ile Gly Ala Phe Met Trp Pro Leu His Trp Ser
              565                    570                    575
Thr Trp Leu Gly Val Phe Ala Ala Leu His Leu Thr Ala Leu Phe Leu
              580                    585                    590
Thr Val Tyr Glu Trp Arg Ser Pro Tyr Gly Leu Thr Pro Arg Gly Arg
              595                    600                    605
Asn Arg Ser Thr Val Phe Ser Tyr Ser Ser Ala Leu Asn Leu Cys Tyr
    610                    615                    620
Ala Ile Leu Phe Arg Arg Thr Val Ser Ser Lys Thr Pro Lys Cys Pro
625                    630                    635                    640
Thr Gly Arg Leu Leu Met Asn Leu Trp Ala Ile Phe Cys Leu Leu Val
              645                    650                    655
Leu Ser Ser Tyr Thr Ala Asn Leu Ala Ala Val Met Val Gly Asp Lys
              660                    665                    670
Thr Phe Glu Glu Leu Ser Gly Ile His Asp Pro Lys Leu His His Pro
              675                    680                    685
Ala Gln Gly Phe Arg Phe Gly Thr Val Trp Glu Ser Ser Ala Glu Ala
    690                    695                    700
Tyr Ile Lys Lys Ser Phe Pro Asp Met His Ala His Met Arg Arg His
705                    710                    715                    720
Ser Ala Pro Thr Thr Pro Arg Gly Val Ala Met Leu Thr Ser Asp Pro
```

```
                725                     730                     735
Pro Lys Leu Asn Ala Phe Ile Met Asp Lys Ser Leu Leu Asp Tyr Glu
            740                     745                     750
Val Ser Ile Asp Ala Asp Cys Lys Leu Leu Thr Val Gly Lys Pro Phe
            755                     760                     765
Ala Ile Glu Gly Tyr Gly Ile Gly Leu Pro Gln Asn Ser Pro Leu Thr
            770                     775                     780
Ser Asn Leu Ser Glu Phe Ile Ser Arg Tyr Lys Ser Ser Gly Phe Ile
785                     790                     795                     800
Asp Leu Leu His Asp Lys Trp Tyr Lys Met Val Pro Cys Gly Lys Arg
                805                     810                     815
Val Phe Ala Val Thr Glu Thr Leu Gln Met Ser Ile Tyr His Phe Ala
                820                     825                     830
Gly Leu Phe Val Leu Leu Cys Leu Gly Leu Gly Ser Ala Leu Leu Ser
            835                     840                     845
Ser Leu Gly Glu His Ala Phe Phe Arg Leu Ala Leu Pro Arg Ile Arg
            850                     855                     860
Lys Gly Ser Arg Leu Gln Tyr Trp Leu His Thr Ser Gln Lys Ile His
865                     870                     875                     880
Arg Ala Leu Asn Thr Glu Pro Pro Glu Gly Ser Lys Glu Glu Thr Ala
                885                     890                     895
Glu Ala Glu Pro Arg
                900
```

```
<210> 4517
<211> 2275
<212> DNA
<213> Homo sapiens
```

```
<400> 4517
actagttcta gatcgcgagc ggagctgctg actgcattct tctctgccac tgcggatgct
60
gcctccccgt ttccagcctg taagcccgtt gtggtggtga gctccctgct gctgcaggag
120
gaggagcccc tggctggggg gaagccgggt gcggacggtg gcagcctgga ggccgtgcgg
180
ctggggccct cgtcaggcct cctagtggac tggctggaaa tgctggaccc cgaggtggtc
240
agcagctgcc ccgacctgca gctcaggctg ctcttctccc ggaggaaggg caaaggtcag
300
gcccaggtgc cctcgttccg tccctacctc ctgaccctct tcacgcatca gtccagctgg
360
cccacactgc accagtgcat ccgagtcctg ctgggcaaga gccgggaaca gaggttcgac
420
ccctctgcct ctctggactt cctctgggcc tgcatccatg ttcctcgcat ctggcagggg
480
cgggaccagc gcaccccgca gaagcggcgg gaggagctgg tgctgcgggt ccagggcccg
540
gagctcatca gcctggtgga gctgatcctg gccgaggcgg agacgcggag ccaggacggg
600
gacacagccg cctgcagcct catccaggcc cggctgcccc tgctgctcag ctgctgctgt
660
ggggacgatg agagtgtcag gaaggtgacg gagcacctgt caggctgcat ccagcagtgg
720
```

```
ggagacagcg tgctgggcag gcgctgccga gaccttctcc tgcagctcta cctacagcgg
780
ccggagctgc gggtgcccgt gcctgaggtc ctactgcaca gcgaaggggc tgccagcagc
840
agcgtctgca agctggacgg actcatccac cgcttcatca cgctccttgc ggacaccagc
900
gactcccggg cgttggagaa ccgaggggcg gatgccagca tggcctgccg gaagctggcg
960
gtggcgcacc cgctgctgct gctcaggcac ctgcccatga tcgcggcgct cctgcacggc
1020
cgcacccacc tcaacttcca ggagttccgg cagcagaacc acctgagctg cttcctgcac
1080
gtgctgggcc tgctggagct gctgcagccg cacgtgttcc gcagcgagca ccaggggggcg
1140
ctgtgggact gccttctgtc cttcatccgc ctgctgctga attacaggaa gtcctcccgc
1200
catctggctg ccttcatcaa caagtttgtg cagttcatcc ataagtacat tacctacaat
1260
gccccagcag ccatctcctt cctgcagaag cacgccgacc cgctccacga cctgtccttc
1320
gacaacagtg acctggtgat gctgaaatcc ctccttgcag ggctcagcct gcccagcagg
1380
gacgacagga ccgaccgagg cctggacgaa gagggcgagg aggagagctc agccggctcc
1440
ttgcccctgg tcagcgtctc cctgttcacc cctctgaccg cggccgagat ggccccctac
1500
atgaaacggc tttcccgggg ccaaacggtg gagggtgagt caggccctgc ttcacccacg
1560
ccagatctgc tggaggttct gagtgacata gacgagatgt cccggcggag acccgagatc
1620
ctgagcttct tctcgaccaa cctgcagcgg ctgatgagct cggccgagga gtgttgccgc
1680
aacctcgcct tcagcctggc cctgcgctcc atgcagaaca gccccagcat tgcagccgct
1740
ttcctgccca cgttcatgta ctgcctgggc agccaggact ttgaggtggt gcagacggcc
1800
ctccggaacc tgcctgagta cgctctcctg tgccaagagc acgcggctgt gctgctccac
1860
cgggccttcc tggtgggcat gtacggccag atggacccca gcgcgcagat ctccgaggcc
1920
ctgaggatcc tgcatatgga ggccgtgatg tgagcctgtg gcagccgacc cccctccaag
1980
ccccggcccg tcccgtcccc ggggatcctc gaggcaaagc ccaggaagcg tgggcgttgc
2040
tggtctgtcc gaggaggtga gggcgccgag ccctgaggcc aggcaggccc aggagcaata
2100
ctccgagccc tggggtggct ccgggccggc cgctggcatc aggggccgtc cagcaagccc
2160
tcattcacct tctgggccac agccctgccg cggagcggcg gatccccccg ggcatggcct
2220
gggctggttt tgaatgaaac gacctgaact gtcaaaaaaa aaaaaaaaaa aaaaa
2275


<210> 4518
```

```
<211> 650
<212> PRT
<213> Homo sapiens

<400> 4518
Thr Ser Ser Arg Ser Arg Ala Glu Leu Leu Thr Ala Phe Phe Ser Ala
1               5                   10                  15
Thr Ala Asp Ala Ala Ser Pro Phe Pro Ala Cys Lys Pro Val Val Val
            20                  25                  30
Val Ser Ser Leu Leu Leu Gln Glu Glu Glu Pro Leu Ala Gly Gly Lys
        35                  40                  45
Pro Gly Ala Asp Gly Gly Ser Leu Glu Ala Val Arg Leu Gly Pro Ser
    50                  55                  60
Ser Gly Leu Leu Val Asp Trp Leu Glu Met Leu Asp Pro Glu Val Val
65                  70                  75                  80
Ser Ser Cys Pro Asp Leu Gln Leu Arg Leu Leu Phe Ser Arg Arg Lys
                85                  90                  95
Gly Lys Gly Gln Ala Gln Val Pro Ser Phe Arg Pro Tyr Leu Leu Thr
                100                 105                 110
Leu Phe Thr His Gln Ser Ser Trp Pro Thr Leu His Gln Cys Ile Arg
        115                 120                 125
Val Leu Leu Gly Lys Ser Arg Glu Gln Arg Phe Asp Pro Ser Ala Ser
    130                 135                 140
Leu Asp Phe Leu Trp Ala Cys Ile His Val Pro Arg Ile Trp-Gln Gly
145                 150                 155                 160
Arg Asp Gln Arg Thr Pro Gln Lys Arg Arg Glu Glu Leu Val Leu Arg
                165                 170                 175
Val Gln Gly Pro Glu Leu Ile Ser Leu Val Glu Leu Ile Leu Ala Glu
                180                 185                 190
Ala Glu Thr Arg Ser Gln Asp Gly Asp Thr Ala Ala Cys Ser Leu Ile
        195                 200                 205
Gln Ala Arg Leu Pro Leu Leu Leu Ser Cys Cys Cys Gly Asp Asp Glu
    210                 215                 220
Ser Val Arg Lys Val Thr Glu His Leu Ser Gly Cys Ile Gln Gln Trp
225                 230                 235                 240
Gly Asp Ser Val Leu Gly Arg Arg Cys Arg Asp Leu Leu Leu Gln Leu
                245                 250                 255
Tyr Leu Gln Arg Pro Glu Leu Arg Val Pro Val Pro Glu Val Leu Leu
                260                 265                 270
His Ser Glu Gly Ala Ala Ser Ser Ser Val Cys Lys Leu Asp Gly Leu
        275                 280                 285
Ile His Arg Phe Ile Thr Leu Leu Ala Asp Thr Ser Asp Ser Arg Ala
    290                 295                 300
Leu Glu Asn Arg Gly Ala Asp Ala Ser Met Ala Cys Arg Lys Leu Ala
305                 310                 315                 320
Val Ala His Pro Leu Leu Leu Leu Arg His Leu Pro Met Ile Ala Ala
                325                 330                 335
Leu Leu His Gly Arg Thr His Leu Asn Phe Gln Glu Phe Arg Gln Gln
                340                 345                 350
Asn His Leu Ser Cys Phe Leu His Val Leu Gly Leu Leu Glu Leu Leu
        355                 360                 365
Gln Pro His Val Phe Arg Ser Glu His Gln Gly Ala Leu Trp Asp Cys
    370                 375                 380
Leu Leu Ser Phe Ile Arg Leu Leu Leu Asn Tyr Arg Lys Ser Ser Arg
```

```
385                    390                    395                    400
His Leu Ala Ala Phe Ile Asn Lys Phe Val Gln Phe Ile His Lys Tyr
                405                    410                    415
Ile Thr Tyr Asn Ala Pro Ala Ala Ile Ser Phe Leu Gln Lys His Ala
                420                    425                    430
Asp Pro Leu His Asp Leu Ser Phe Asp Asn Ser Asp Leu Val Met Leu
            435                    440                    445
Lys Ser Leu Leu Ala Gly Leu Ser Leu Pro Ser Arg Asp Asp Arg Thr
        450                    455                    460
Asp Arg Gly Leu Asp Glu Glu Gly Glu Glu Glu Ser Ser Ala Gly Ser
    465                    470                    475                    480
Leu Pro Leu Val Ser Val Ser Leu Phe Thr Pro Leu Thr Ala Ala Glu
                485                    490                    495
Met Ala Pro Tyr Met Lys Arg Leu Ser Arg Gly Gln Thr Val Glu Gly
                500                    505                    510
Glu Ser Gly Pro Ala Ser Pro Thr Pro Asp Leu Leu Glu Val Leu Ser
            515                    520                    525
Asp Ile Asp Glu Met Ser Arg Arg Arg Pro Glu Ile Leu Ser Phe Phe
    530                    535                    540
Ser Thr Asn Leu Gln Arg Leu Met Ser Ser Ala Glu Glu Cys Cys Arg
545                    550                    555                    560
Asn Leu Ala Phe Ser Leu Ala Leu Arg Ser Met Gln Asn Ser Pro Ser
                565                    570                    575
Ile Ala Ala Ala Phe Leu Pro Thr Phe Met Tyr Cys Leu Gly Ser Gln
                580                    585                    590
Asp Phe Glu Val Val Gln Thr Ala Leu Arg Asn Leu Pro Glu Tyr Ala
            595                    600                    605
Leu Leu Cys Gln Glu His Ala Ala Val Leu Leu His Arg Ala Phe Leu
    610                    615                    620
Val Gly Met Tyr Gly Gln Met Asp Pro Ser Ala Gln Ile Ser Glu Ala
625                    630                    635                    640
Leu Arg Ile Leu His Met Glu Ala Val Met
                645                    650
```

```
<210> 4519
<211> 2326
<212> DNA
<213> Homo sapiens

<400> 4519
gacagagtgc agccttttcc tcccctaata gaaaagccat tgccctcttt tcctcccta
60
atagaaaagc cattgccctc ttttcctcca cccttaagaa gacctgcatc tgttggacca
120
acagacaact atccggctta cggccagggg agcccctgca gctgcacaga accagtttct
180
tatgtatctg gcggtaattg ggaaagcttc tgagaaagtc catggggccg atgtatggga
240
gatgaatgtg gtcccggagg catccaaacg agggctgtgt ggtgtgctca tgtggaggga
300
tggactacac tgcatactaa ctgtaagcag gccgagagac ccaataacca gcagaattgt
360
ttcaaagttt gcgattggca caaagagttg tacgactgga gactgggacc ttggaatcag
420
```

```
tgtcagcccg tgatttcaaa aagcctagag aaacctcttg agtgcattaa gggggaagaa
480
ggtattcagg tgagggagat agcgtgcatc cagaaagaca aagacattcc tgcggaggat
540
atcatctgtg agtactttga gcccaagcct ctcctggagc aggcttgcct cattccttgc
600
cagcaagatt gcatcgtgtc tgaattttct gcctggtccg aatgctccaa gacctgcggc
660
agcgggctcc agcaccggac gcgtcatgtg gtggcgcccc cgcagttcgg aggctctggc
720
tgtccaaacc tgacggagtt ccaggtgtgc caatccagtc catgcgaggc cgaggagctc
780
aggtacagcc tgcatgtggg gccctggagc acctgctcaa tgccccactc ccgacaagta
840
agacaagcaa ggagacgcgg gaagaataaa gaacgggaaa aggaccgcag caaaggagta
900
aaggatccag aagcccgcga gcttattaag aaaaagagaa acagaaacag gcagaacaga
960
caagagaaca aatattggga catccagatt ggatatcaga ccagagaggt tatgtgcatt
1020
aacaagacgg ggaaagctgc tgatttaagc ttttgccagc aagagaagct tccaatgacc
1080
ttccagtcct gtgtgatcac caaagagtgc caggtttccg agtggtcaga gtggagcccc
1140
tgctcaaaaa catgccatga catggtgtcc cctgcaggca ctcgtgtaag gacacgaacc
1200
atcaggcagt ttcccattgg cagtgaaaag gagtgtccag aatttgaaga aaaagaaccc
1260
tgtttgtctc aaggagatgg agttgtcccc tgtgccacgt atggctggag aactacagag
1320
tggactgagt gccgtgtgga ccctttgctc agtcagcagg acaagaggcg cggcaaccag
1380
acggccctct gtggagggggg catccagacc cgagaggtgt actgcgtgca ggccaacgaa
1440
aacctcctct cacaattaag tacccacaag aacaaagaag cctcaaagcc aatggactta
1500
aaattatgca ctggacctat ccctaatact acacagctgt gccacattcc ttgtccaact
1560
gaatgtgaag tttcaccttg gtcagcttgg ggaccttgta cttatgaaaa ctgtaatgat
1620
ccgcaaggga aaaaaggctt caaactgagg aagcggcgca ttaccaatga gcccactgga
1680
ggctctgggt taaccggaaa ctgccctcac ttactggaag ccattccctg tgaagagcct
1740
gcctgttatg actggaaagc ggtgagactg ggagactgcg agccagataa cggaaaggag
1800
tgtggtccag gcacgcaagt tcaagaggtt gtgtgcatca acagtgatgg agaagaagtt
1860
gacagacagc tgtgcagaga tgccatcttc cccatccctg tggcctgtga tgccccatgc
1920
ccgaaagact gtgtgctcag cacatggtct acgtggtcct cctgctcaca cacctgctca
1980
gggaaaacga cagaagggaa acagatacga gcacgatcca ttctggccta tgcgggtgaa
2040
```

```
gaaggtgagt cgccagcttc agacgccatc taggttcgtt tcaaaagtta gtgtgcatct
2100
tttttgtgta gcctggaaaa gatgatattc tatgaaagtc aacaaccaga aattcagcca
2160
tccaagattt aatatctgtt gatgtgttga gcaatttgat tctgtccccc aaaattaatc
2220
ttgaaaatgg atctctaaca aaggagaaag acttttttaaa agtgaactca ttttgctttt
2280
tcctaccacc ttaatatata tttaactctt tgctccaaaa aaaaaa
2326


<210> 4520
<211> 617
<212> PRT
<213> Homo sapiens

<400> 4520
Pro Trp Gly Arg Cys Met Gly Asp Glu Cys Gly Pro Gly Gly Ile Gln
 1               5                  10                  15
Thr Arg Ala Val Trp Cys Ala His Val Glu Gly Trp Thr Thr Leu His
               20                  25                  30
Thr Asn Cys Lys Gln Ala Glu Arg Pro Asn Asn Gln Gln Asn Cys Phe
           35                  40                  45
Lys Val Cys Asp Trp His Lys Glu Leu Tyr Asp Trp Arg Leu Gly Pro
       50                  55                  60
Trp Asn Gln Cys Gln Pro Val Ile Ser Lys Ser Leu Glu Lys Pro Leu
65                  70                  75                  80
Glu Cys Ile Lys Gly Glu Glu Gly Ile Gln Val Arg Glu Ile Ala Cys
               85                  90                  95
Ile Gln Lys Asp Lys Asp Ile Pro Ala Glu Asp Ile Ile Cys Glu Tyr
               100                 105                 110
Phe Glu Pro Lys Pro Leu Leu Glu Gln Ala Cys Leu Ile Pro Cys Gln
       115                 120                 125
Gln Asp Cys Ile Val Ser Glu Phe Ser Ala Trp Ser Glu Cys Ser Lys
       130                 135                 140
Thr Cys Gly Ser Gly Leu Gln His Arg Thr Arg His Val Val Ala Pro
145                 150                 155                 160
Pro Gln Phe Gly Gly Ser Gly Cys Pro Asn Leu Thr Glu Phe Gln Val
               165                 170                 175
Cys Gln Ser Ser Pro Cys Glu Ala Glu Glu Leu Arg Tyr Ser Leu His
               180                 185                 190
Val Gly Pro Trp Ser Thr Cys Ser Met Pro His Ser Arg Gln Val Arg
           195                 200                 205
Gln Ala Arg Arg Arg Gly Lys Asn Lys Glu Arg Glu Lys Asp Arg Ser
       210                 215                 220
Lys Gly Val Lys Asp Pro Glu Ala Arg Glu Leu Ile Lys Lys Lys Arg
225                 230                 235                 240
Asn Arg Asn Arg Gln Asn Arg Gln Glu Asn Lys Tyr Trp Asp Ile Gln
               245                 250                 255
Ile Gly Tyr Gln Thr Arg Glu Val Met Cys Ile Asn Lys Thr Gly Lys
               260                 265                 270
Ala Ala Asp Leu Ser Phe Cys Gln Gln Glu Lys Leu Pro Met Thr Phe
       275                 280                 285
Gln Ser Cys Val Ile Thr Lys Glu Cys Gln Val Ser Glu Trp Ser Glu
```

```
        290                  295                  300
Trp Ser Pro Cys Ser Lys Thr Cys His Asp Met Val Ser Pro Ala Gly
305                  310                  315                  320
Thr Arg Val Arg Thr Arg Thr Ile Arg Gln Phe Pro Ile Gly Ser Glu
                325                  330                  335
Lys Glu Cys Pro Glu Phe Glu Glu Lys Glu Pro Cys Leu Ser Gln Gly
                340                  345                  350
Asp Gly Val Val Pro Cys Ala Thr Tyr Gly Trp Arg Thr Thr Glu Trp
            355                  360                  365
Thr Glu Cys Arg Val Asp Pro Leu Leu Ser Gln Gln Asp Lys Arg Arg
    370                  375                  380
Gly Asn Gln Thr Ala Leu Cys Gly Gly Gly Ile Gln Thr Arg Glu Val
385                  390                  395                  400
Tyr Cys Val Gln Ala Asn Glu Asn Leu Leu Ser Gln Leu Ser Thr His
                405                  410                  415
Lys Asn Lys Glu Ala Ser Lys Pro Met Asp Leu Lys Leu Cys Thr Gly
                420                  425                  430
Pro Ile Pro Asn Thr Thr Gln Leu Cys His Ile Pro Cys Pro Thr Glu
            435                  440                  445
Cys Glu Val Ser Pro Trp Ser Ala Trp Gly Pro Cys Thr Tyr Glu Asn
    450                  455                  460
Cys Asn Asp Pro Gln Gly Lys Lys Gly Phe Lys Leu Arg Lys Arg Arg
465                  470                  475                  480
Ile Thr Asn Glu Pro Thr Gly Gly Ser Gly Leu Thr Gly Asn Cys Pro
                485                  490                  495
His Leu Leu Glu Ala Ile Pro Cys Glu Glu Pro Ala Cys Tyr Asp Trp
            500                  505                  510
Lys Ala Val Arg Leu Gly Asp Cys Glu Pro Asp Asn Gly Lys Glu Cys
        515                  520                  525
Gly Pro Gly Thr Gln Val Gln Glu Val Val Cys Ile Asn Ser Asp Gly
    530                  535                  540
Glu Glu Val Asp Arg Gln Leu Cys Arg Asp Ala Ile Phe Pro Ile Pro
545                  550                  555                  560
Val Ala Cys Asp Ala Pro Cys Pro Lys Asp Cys Val Leu Ser Thr Trp
            565                  570                  575
Ser Thr Trp Ser Ser Cys Ser His Thr Cys Ser Gly Lys Thr Thr Glu
            580                  585                  590
Gly Lys Gln Ile Arg Ala Arg Ser Ile Leu Ala Tyr Ala Gly Glu Glu
        595                  600                  605
Gly Glu Ser Pro Ala Ser Asp Ala Ile
    610                  615
```

<210> 4521
<211> 1071
<212> DNA
<213> Homo sapiens

<400> 4521
nagattccta taaaggatca tgaattagat gggtagtaga tttatccaca atgataaaga
60
tcagaagaaa tgaaataatg ccttcaaacg actgaggaaa aataattatt aacctataat
120
ttataccaat ataaacaatt actcaggaaa aaaagaaaat aaaaacttgc aagggctaaa
180

```
ataacttgct taccaccaaa gatgcttgct ctaagaactg tgaagggatt caagaggaaa
240
agtacaccca gagagggctc atacatgtcc tctccccctc ctcctccacc accaggacac
300
acagaaactg cctcctcttt tcagccctct cccttctcag ctgactttga gctacaaata
360
tcccttctct acttggagag ccccatttca ttacaggaat ttgctttgag ttttattatc
420
attttagtct atgtcttaga ttgggctgct ataacaaggt gccataggct gagcggctta
480
aacaacaaac actcatatcc cacagttaca gaggctgaga agcctggggt caaggtacca
540
gcatggtctg attctgttct ggaggctggg aaatccaaga tggaagcact ggtaggtttg
600
gtgtctggga gggcttctct ctgcttccaa gatggtgcct tgtcgctgca tcttccagag
660
ggaaggaatg ctgtgtcctt gcagcacaga agaaacacat ctgaaaagaa atcaagcaga
720
aaagttgaaa ataaagagat ggaatatata tatgaaaact actacatata ggaagggatg
780
tagcaaagac acagagagaa tataatttaa ggcaaaaagc ttcaatagga tttcaaagca
840
aaccttgcat actaaaaaaa ggaaaccaaa aataaaccaa aagaaaccga aaaccatgaa
900
cttgcaggag aattttccaa agccgtaatt ataatgagag tgtttttaag tctataagaa
960
attaatatat caaacaaata aagattaata agaatttgga atttgtatga aatggcaaag
1020
gaaaagccag gcgtggtggc ttacgcctgt aatgccagca ctttgggagg c
1071
```

```
<210> 4522
<211> 189
<212> PRT
<213> Homo sapiens
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```
<400> 4522
Met Leu Ala Leu Arg Thr Val Lys Gly Phe Lys Arg Lys Ser Thr Pro
1               5                   10                  15
Arg Glu Gly Ser Tyr Met Ser Ser Pro Pro Pro Pro Pro Pro Gly
            20                  25                  30
His Thr Glu Thr Ala Ser Ser Phe Gln Pro Ser Pro Phe Ser Ala Asp
        35                  40                  45
Phe Glu Leu Gln Ile Ser Leu Leu Tyr Leu Glu Ser Pro Ile Ser Leu
    50                  55                  60
Gln Glu Phe Ala Leu Ser Phe Ile Ile Ile Leu Val Tyr Val Leu Asp
65                  70                  75                  80
Trp Ala Ala Ile Thr Arg Cys His Arg Leu Ser Gly Leu Asn Asn Lys
                85                  90                  95
His Ser Tyr Pro Thr Val Thr Glu Ala Glu Lys Pro Gly Val Lys Val
            100                 105                 110
Pro Ala Trp Ser Asp Ser Val Leu Glu Ala Gly Lys Ser Lys Met Glu
        115                 120                 125
Ala Leu Val Gly Leu Val Ser Gly Arg Ala Ser Leu Cys Phe Gln Asp
```

```
      130                   135                  140
Gly Ala Leu Ser Leu His Leu Pro Glu Gly Arg Asn Ala Val Ser Leu
145                   150                  155                  160
Gln His Arg Arg Asn Thr Ser Glu Lys Lys Ser Ser Arg Lys Val Glu
                  165                  170                  175
Asn Lys Glu Met Glu Tyr Ile Tyr Glu Asn Tyr Tyr Ile
              180                  185
```

<210> 4523
<211> 1022
<212> DNA
<213> Homo sapiens

<400> 4523
```
gcactgtata ttcttgtctg cacacgggac tcctcagctc gcctccttgg aaaaaccaag
60
gacactccca ggctgagtct cntcttggtg attctgggcg tcatcttcat gaatggcaac
120
cgtgccagcg aggctgtcct ctgggaggca ctacgcaaga tgggactgcg ccctggggtg
180
aggcacccat tcctcggcga tctgaggaag ctcatcacag atgactttgt gaagcagaag
240
tacctggaat acaagaagat ccccaacagc aacccacctg agtatgaatt cctctggggc
300
ctgcgagccc gccatgagac cagcaagatg agggtcctga gattcatcgc ccagaatcag
360
aaccgagacc cccgggaatg gaaggctcat ttcttggagg ctgtggatga tgctttcaag
420
acaatggatg tggatatggc cgaggaacat gccagggccc agatgagggc ccagatgaat
480
atcggggatg aagcgctgat ggacggtgg agctgggatg acatacaagt cgagctcctg
540
acctgggatg aggacggaga ttttggcgat gcctgggcca ggatcccctt tgctttctgg
600
gccagatacc atcagtacat tctgaatagc aaccgtgcca acaggagggc cacgtggaga
660
gctggcgtca gcagtggcac caatggaggg gccagcacca gcgtcctaga tggccccagc
720
accagctcca ccatccggac cagaaatgct gccagagctg cgccagctt cttctcctgg
780
atccagtagg agtttcggca ccgttgacga actgcagcga tcttactggc caagccagag
840
cgcctcctct cagattcctt ctcgacacag caccctaggc ggcttcttcc tgtcagtcgg
900
aggtggcatg caagatgaag ctctctttgc tcttcctgct ttcattttgt gctttttcctt
960
gtgttttcat gttttgggta tcagtgttac attaaagttg caaaattaaa aaaaaaaaaa
1020
aa
1022
```

<210> 4524
<211> 262
<212> PRT

<213> Homo sapiens

<400> 4524
Ala Leu Tyr Ile Leu Val Cys Thr Arg Asp Ser Ser Ala Arg Leu Leu
 1   5   10   15
Gly Lys Thr Lys Asp Thr Pro Arg Leu Ser Leu Xaa Leu Val Ile Leu
          20   25   30
Gly Val Ile Phe Met Asn Gly Asn Arg Ala Ser Glu Ala Val Leu Trp
          35   40   45
Glu Ala Leu Arg Lys Met Gly Leu Arg Pro Gly Val Arg His Pro Phe
    50   55   60
Leu Gly Asp Leu Arg Lys Leu Ile Thr Asp Asp Phe Val Lys Gln Lys
65   70   75   80
Tyr Leu Glu Tyr Lys Lys Ile Pro Asn Ser Asn Pro Pro Glu Tyr Glu
                85   90   95
Phe Leu Trp Gly Leu Arg Ala Arg His Glu Thr Ser Lys Met Arg Val
          100   105   110
Leu Arg Phe Ile Ala Gln Asn Gln Asn Arg Asp Pro Arg Glu Trp Lys
          115   120   125
Ala His Phe Leu Glu Ala Val Asp Asp Ala Phe Lys Thr Met Asp Val
    130   135   140
Asp Met Ala Glu Glu His Ala Arg Ala Gln Met Arg Ala Gln Met Asn
145   150   155   160
Ile Gly Asp Glu Ala Leu Ile Gly Arg Trp Ser Trp Asp Asp Ile Gln
                165   170   175
Val Glu Leu Leu Thr Trp Asp Glu Asp Gly Asp Phe Gly Asp Ala Trp
                180   185   190
Ala Arg Ile Pro Phe Ala Phe Trp Ala Arg Tyr His Gln Tyr Ile Leu
          195   200   205
Asn Ser Asn Arg Ala Asn Arg Arg Ala Thr Trp Arg Ala Gly Val Ser
    210   215   220
Ser Gly Thr Asn Gly Gly Ala Ser Thr Ser Val Leu Asp Gly Pro Ser
225   230   235   240
Thr Ser Ser Thr Ile Arg Thr Arg Asn Ala Ala Arg Ala Gly Ala Ser
                245   250   255
Phe Phe Ser Trp Ile Gln
                260

<210> 4525
<211> 1731
<212> DNA
<213> Homo sapiens

<400> 4525
nngaaccatg gcattctcca ggctctgacc acagaagctt atgaatggga gccacgtgtt
60
gtgagtacag aggtggtcag agcccaagaa gaatgggaag ctgtggacac catccagcca
120
gagacaggga gccaagctag ctcagagcag cctgggcagc taatctcctt cagtgaggcc
180
ctgcagcact tccagactgt ggacctttcc cccttcaaga aaagaatcca gccaactatt
240
cgaaggactg ggctcgccgc cctccgacac tacctcttcg ggcctccaaa gctccaccag
300

cgccttcggg aagaaaggga cttggtcctg accattgctc agtgtggcct ggatagccaa
360
gacccagtgc atggccgagt cctccagacc atctataaga agctgaccgg ctccaagttt
420
gactgtgccc ttcatggaaa ccactgggag gacctgggct ttcagggagc gaatccagcc
480
acagacctga gaggcgcagg cttccttgcc ctcctgcatc tgctctacct agtgatggac
540
tcaaagacct tgccgatggc gcaggagatt ttccgcctgt ctcgtcacca catccagcaa
600
ttccctttct gtttgatgtc cgtgaacatc acccacattg ccatccaggc cttgagagag
660
gagtgtctct ccagagagtg taatcggcag cagaaggtca tccccgtggt gaacagcttc
720
tatgccgcca cattcctcca cctcgcacat gtctggagga cacagcggaa gaccatctca
780
gactcgggct ttgtcctcaa aggtgtgctc tttcttctgg ggaggcctag gctgaatgca
840
cagtgtccca ggtccagaga gcccaaggtg gttgctagac tggtttttggc tgcagttctt
900
ccccatccac actttctcaa attccagctt accaaaatct ccatcaccca ccccctggag
960
tctgctagtt ctcctttctc tgccctgact gtcgcccttt tctggtctta tacttatgac
1020
aagcatatat tctgatcaaa aattgggagc cagggtccaa tagttggact attcaaagtt
1080
gcaattgtgc agacaaggta gagtgtgtgg tccctgtggc tgtagctggc tccctagcct
1140
acctctctgg tgatctctcc atctgaggct ccttcacttt ctctccatgg gatagggggtt
1200
gggggtactc cctagagctg ctaggcttga ggccttgact gttgtgtcac ccagagcccc
1260
ctcaagcctt ctgctcccca attctctctg ttgcagagtt ggaagtattg gccaagaaga
1320
gcccacggcg ggctgctcaa gaccctggag ctgtacttgg ccagggtgtc aaagggacag
1380
gcctccttgt tgggagcaca gaagtgctat gggccagaag cccctccctt caaggatctc
1440
accttcacag gtgagagtga cctgcagtct cactcatccg aaggcgtatg gctgatctga
1500
cctccgagat gaatggaggc ttaaaggctg agctgcaggg gctttcaggg ggtcagtgga
1560
gccatgtcag gagcctggcc aggccgcacc ccttgctgtc tcagcagatg ggatatagga
1620
agctcctggg cttagctgtg ggaagccaag taccctcacc ggcatgggac atgaggggca
1680
gctagacttc accccttcc cgcagacctg cctccagagc aaggagaatt c
1731

<210> 4526
<211> 344
<212> PRT
<213> Homo sapiens

```
<400> 4526
Xaa Asn His Gly Ile Leu Gln Ala Leu Thr Thr Glu Ala Tyr Glu Trp
 1               5                   10                  15
Glu Pro Arg Val Val Ser Thr Glu Val Val Arg Ala Gln Glu Glu Trp
            20                  25                  30
Glu Ala Val Asp Thr Ile Gln Pro Glu Thr Gly Ser Gln Ala Ser Ser
        35                  40                  45
Glu Gln Pro Gly Gln Leu Ile Ser Phe Ser Glu Ala Leu Gln His Phe
    50                  55                  60
Gln Thr Val Asp Leu Ser Pro Phe Lys Lys Arg Ile Gln Pro Thr Ile
65                  70                  75                  80
Arg Arg Thr Gly Leu Ala Ala Leu Arg His Tyr Leu Phe Gly Pro Pro
            85                  90                  95
Lys Leu His Gln Arg Leu Arg Glu Glu Arg Asp Leu Val Leu Thr Ile
        100                 105                 110
Ala Gln Cys Gly Leu Asp Ser Gln Asp Pro Val His Gly Arg Val Leu
        115                 120                 125
Gln Thr Ile Tyr Lys Lys Leu Thr Gly Ser Lys Phe Asp Cys Ala Leu
    130                 135                 140
His Gly Asn His Trp Glu Asp Leu Gly Phe Gln Gly Ala Asn Pro Ala
145                 150                 155                 160
Thr Asp Leu Arg Gly Ala Gly Phe Leu Ala Leu Leu His Leu Leu Tyr
            165                 170                 175
Leu Val Met Asp Ser Lys Thr Leu Pro Met Ala_Gln Glu Ile Phe Arg
            180                 185                 190
Leu Ser Arg His His Ile Gln Gln Phe Pro Phe Cys Leu Met Ser Val
        195                 200                 205
Asn Ile Thr His Ile Ala Ile Gln Ala Leu Arg Glu Glu Cys Leu Ser
    210                 215                 220
Arg Glu Cys Asn Arg Gln Gln Lys Val Ile Pro Val Val Asn Ser Phe
225                 230                 235                 240
Tyr Ala Ala Thr Phe Leu His Leu Ala His Val Trp Arg Thr Gln Arg
            245                 250                 255
Lys Thr Ile Ser Asp Ser Gly Phe Val Leu Lys Gly Val Leu Phe Leu
            260                 265                 270
Leu Gly Arg Pro Arg Leu Asn Ala Gln Cys Pro Arg Ser Arg Glu Pro
            275                 280                 285
Lys Val Val Ala Arg Leu Val Leu Ala Ala Val Leu Pro His Pro His
    290                 295                 300
Phe Leu Lys Phe Gln Leu Thr Lys Ile Ser Ile Thr His Pro Leu Glu
305                 310                 315                 320
Ser Ala Ser Ser Pro Phe Ser Ala Leu Thr Val Ala Leu Phe Trp Ser
                325                 330                 335
Tyr Thr Tyr Asp Lys His Ile Phe
                340

<210> 4527
<211> 885
<212> DNA
<213> Homo sapiens

<400> 4527
nnttttttttt ttttttttttt ttttttttttt ttttttttttt tttttttttg cagagacatg
60
```

gctgcattta ttgttcccag cccggcgaga aggtgttccc agaaaggttc cttgggtcac
120
ctgcccaccc agccttggct ctgggctgcc atgtccccac gggggcagga gagaggcaca
180
agtcacagtc aggcaaggga gcctcagcgt cctgggcggt ggctgttggg gtccctccag ·
240
tcttcacctg ggaccctcgg ccaggctggg acagcatcca ggaggcgagg ctgcatggtc
300
cagcggtggg tgcaggtggc aacaggtcgg cgggctgtgc aggttccaaa aggagctctc
360
gggttggcac tgggtgagac cagccccggg gccagcaggg gaatgagcgg tggagcaggg
420
ggttgctggg cactggggtg ggccccatct cctgtccttc cctcatggct gctggaaggg
480
ccgcctccct ggctcagcat catctcagat tccgggactc aaacaccgtc tcctcgtcgc
540
tgtccagcga ggccatctcc gtggggtcct cagtgttggc gaggaggccg tatcgcctcc
600
gctgaggctt cttcaaccta aacgcccgga tcaggaagta gagcgcggtc aggccgcaga
660
agcccaggat cacgtagaag gagcgcgtca gcgccgagcc cgacgccccc ggcggacgcg
720
tgtgcgtgct gttgtgtggc gcgcccggct ggctcccgtt cgtcacggcc ggcggcggcg
780
acaacgtgac ctggcggggg cagcggcgag cctcttcggc accgcacggc agcgccgcca
840
gcagcagcgc cagcaggagc agcagcagcg gcggctgcag cacgc
885

<210> 4528
<211> 206
<212> PRT
<213> Homo sapiens

<400> 4528
Xaa Phe Phe Phe Phe Phe Phe Phe Phe Phe Phe Phe Phe Phe Phe Phe
 1   5   10   15
Cys Arg Asp Met Ala Ala Phe Ile Val Pro Ser Pro Ala Arg Arg Cys
            20   25   30
Ser Gln Lys Gly Ser Leu Gly His Leu Pro Thr Gln Pro Trp Leu Trp
        35   40   45
Ala Ala Met Ser Pro Arg Gly Gln Glu Arg Gly Thr Ser His Ser Gln
    50   55   60
Ala Arg Glu Pro Gln Arg Pro Gly Arg Trp Leu Leu Gly Ser Leu Gln
65   70   75   80
Ser Ser Pro Gly Thr Leu Gly Gln Ala Gly Thr Ala Ser Arg Arg Arg
                85   90   95
Gly Cys Met Val Gln Arg Trp Val Gln Val Ala Thr Gly Arg Arg Ala
            100   105   110
Val Gln Val Pro Lys Gly Ala Leu Gly Leu Ala Leu Gly Glu Thr Ser
        115   120   125
Pro Gly Ala Ser Arg Gly Met Ser Gly Gly Ala Gly Gly Cys Trp Ala
    130   135   140
Leu Gly Trp Ala Pro Ser Pro Val Leu Pro Ser Trp Leu Leu Glu Gly

```
145                    150                  155                   160
Pro Pro Pro Trp Leu Ser Ile Ile Ser Asp Ser Gly Thr Gln Thr Pro
                165                  170                  175
Ser Pro Arg Arg Cys Pro Ala Arg Pro Ser Pro Trp Gly Pro Gln Cys
            180                  185                  190
Trp Arg Gly Gly Arg Ile Ala Ser Ala Glu Ala Ser Ser Thr
        195                  200                  205
```

```
<210> 4529
<211> 546
<212> DNA
<213> Homo sapiens
```

```
<400> 4529
nngagagctg agaggtggaa aatggcgctg acgtgagcgc gaactcgcac tgcccagagg
60
gtggccgccg cctaagctgc agccgccgga gccgcagaaa caagaggccg agccgtgtcg
120
aagatggagg agaaaccctc agggcccatc ccggacatgc tggccactgc agagcccagc
180
tccagtgaga ccgacaagga ggtgttgtcc ccggctgtgc cagctgcagc cccctcctcc
240
tccatgtcgg aggagccagg ccctgagcag gcagccacac cgccagtggg gaacgtggag
300
gggctggagg gatgcagcag ggctcctccc cagccccaga cagctgccag tctggccccg
360
gacccagccc tggcctgacc agcatagtct ccgggaccag cgaggacctg cggcctccca
420
gacgacgccc acctccaggg aagcaaatcc cttgctccag ccctggctgc tgcctcagtt
480
ttcccagcgt ccgtgacctg cacagcatc tgcgaaccca ctgcccgccg agccctatgc
540
agtctc
546
```

```
<210> 4530
<211> 84
<212> PRT
<213> Homo sapiens
```

```
<400> 4530
Met Glu Glu Lys Pro Ser Gly Pro Ile Pro Asp Met Leu Ala Thr Ala
 1               5                   10                  15
Glu Pro Ser Ser Ser Glu Thr Asp Lys Glu Val Leu Ser Pro Ala Val
            20                  25                  30
Pro Ala Ala Ala Pro Ser Ser Ser Met Ser Glu Glu Pro Gly Pro Glu
        35                  40                  45
Gln Ala Ala Thr Pro Pro Val Gly Asn Val Glu Gly Leu Glu Gly Cys
    50                  55                  60
Ser Arg Ala Pro Pro Gln Pro Gln Thr Ala Ala Ser Leu Ala Pro Asp
65                  70                  75                  80
Pro Ala Leu Ala
```

```
<210> 4531
<211> 1414
<212> DNA
<213> Homo sapiens

<400> 4531
nncacgtggc ctccgagcag ctcagggcgc ccttgaaagt tcttggatct gcgggttatg
60
gccggtccct tgcagggcgg tggggcccgg gccctggacc tactccgggg cctgccgcgt
120
gtgagcctgg ccaacttaaa gccgaatccc ggctccaaga aaccggagag aagaccaaga
180
ggtcggagaa gaggtagaaa atgtggcaga ggccataaag gagaaaggca aagaggaacc
240
cggccccgct tgggctttga gggaggccag actccatttt acatccgaat cccaaaatac
300
gggtttaacg aaggacatag tttcagacgc cagtataagc ctttgagtct caatagactg
360
cagtatctta ttgatttggg tcgtgttgat cctagtcaac ctattgactt aacccagctt
420
gtcaatggga gaggtgtgac catccagcca cttaaaaggg attatggtgt ccagctggtt
480
gaggagggtg ctgacacctt tacggcaaaa gttaatattg aagtacagtt ggcttcagaa
540
ctagctattg ctgccattga aaaaaatggt ggtgttgtta ctacagcctt ctatgatcca
600
agaagtctgg acattgtatg caaacctgtt ccattctttc ttcgtggaca acccattcca
660
aaaagaatgc ttccaccaga gaactggta ccatattaca ctgatgcaaa gaaccgtggg
720
tacctggcgg atcctgccaa atttcctgaa gcacgacttg aactcgccag gaagtatggt
780
tatatcttac ctgatatcac taaagatgaa ctcttcaaaa tgctctgtac taggaaggat
840
ccaaggcaga ttttctttgg tcttgctcca ggatgggtgg tgaatatggc cgataagaaa
900
atcctaaaac ctacagatga aaatctcctt aagtattata cctcatgaat tcccgtccaa
960
ggaagcagag ttgttaaaga gtactggaat aggggctgaa ggatctatat tcccttattg
1020
cattttcctt atgtataatt ttccagatgg tgatgttact tttcagtgta ctcatatgtc
1080
tcattttcat ctaaaattaa atggcaggaa acaaggactg catagagaaa ctgagtctgt
1140
gtgggttctg tctcaaagat acaaactccc tgatagtcta tggaaggaaa atgacaacta
1200
ttttagaata tttctagttt gttttttcag tgatctttc atccaggcct tgttactgtt
1260
acagatcaga atgaaatgca caagtggaat gggattgacc tgtaggcctg ctctgccgag
1320
atgagagcag atggaatgag ttggtgaccc ctcttaatct gtagcctcag ggaaacacgg
1380
ctacccaatg ccaagatggt aaaccctcac gcgt
1414
```

<210> 4532
<211> 296
<212> PRT
<213> Homo sapiens

<400> 4532
Met Ala Gly Pro Leu Gln Gly Gly Gly Ala Arg Ala Leu Asp Leu Leu
 1   5   10   15
Arg Gly Leu Pro Arg Val Ser Leu Ala Asn Leu Lys Pro Asn Pro Gly
              20   25   30
Ser Lys Lys Pro Glu Arg Arg Pro Arg Gly Arg Arg Arg Gly Arg Lys
          35   40   45
Cys Gly Arg Gly His Lys Gly Glu Arg Gln Arg Gly Thr Arg Pro Arg
      50   55   60
Leu Gly Phe Glu Gly Gly Gln Thr Pro Phe Tyr Ile Arg Ile Pro Lys
65   70   75   80
Tyr Gly Phe Asn Glu Gly His Ser Phe Arg Arg Gln Tyr Lys Pro Leu
                  85   90   95
Ser Leu Asn Arg Leu Gln Tyr Leu Ile Asp Leu Gly Arg Val Asp Pro
              100   105   110
Ser Gln Pro Ile Asp Leu Thr Gln Leu Val Asn Gly Arg Gly Val Thr
          115   120   125
Ile Gln Pro Leu Lys Arg Asp Tyr Gly Val Gln Leu Val Glu Glu Gly
      130   135   140
Ala Asp Thr Phe Thr Ala Lys Val Asn Ile Glu Val Gln Leu Ala Ser
145   150   155   160
Glu Leu Ala Ile Ala Ala Ile Glu Lys Asn Gly Gly Val Val Thr Thr
                  165   170   175
Ala Phe Tyr Asp Pro Arg Ser Leu Asp Ile Val Cys Lys Pro Val Pro
              180   185   190
Phe Phe Leu Arg Gly Gln Pro Ile Pro Lys Arg Met Leu Pro Pro Glu
          195   200   205
Glu Leu Val Pro Tyr Tyr Thr Asp Ala Lys Asn Arg Gly Tyr Leu Ala
      210   215   220
Asp Pro Ala Lys Phe Pro Glu Ala Arg Leu Glu Leu Ala Arg Lys Tyr
225   230   235   240
Gly Tyr Ile Leu Pro Asp Ile Thr Lys Asp Glu Leu Phe Lys Met Leu
                  245   250   255
Cys Thr Arg Lys Asp Pro Arg Gln Ile Phe Phe Gly Leu Ala Pro Gly
              260   265   ,   270
Trp Val Val Asn Met Ala Asp Lys Lys Ile Leu Lys Pro Thr Asp Glu
          275   280   285
Asn Leu Leu Lys Tyr Tyr Thr Ser
      290   295

<210> 4533
<211> 968
<212> DNA
<213> Homo sapiens

<400> 4533
acgcgtgccc agcacatgtg tgcacacgca gatgcaggag agaacacaca ccaccgtctc
60

tttgcacacg tgtgcccctg tccggacgcc ggggctgagg ccgatcgcgt cgggcagcgg
120
gcgcggcggc cccgcgcagc catggactgg ctcatgggga agtccaaagc caagcccaat
180
ggcaagaagc ccgctgcgga ggagaggaag gcctacctgg agcctgagca caccaaggcc
240
aggatcaccg acttccagtt caaggagctg gtggtgctgc cccgggagat cgacctcaac
300
gagtggctgg ccagcaacac aacaacattt ttccaccaca tcaacctgca gtatagcaca
360
atctcggagt tctgcacagg agagacgtgt cagacgatgg ccgtgtgcaa cacacagtac
420
tactggtatg acgagcgggg gaagaaggtc aagtgcacgg ccccacagta cgttgacttc
480
gtcatgagct ccgtgcagaa gctggtgacg gatgaggacg tgttccccac aaaatacggc
540
agagaattcc ccagctcctt tgagtccctg gtgaggaaga tctgcagaca cctgttccac
600
gtgctggcac acatctactg ggcccacttc aaggagacgc tggccctgga gctgcacgga
660 .   ..
cacttgaaca cgctctacgt ccacttcatc ctctttgctc gggagttcaa cctgctggac
720
cccaaagaga ccgccatcat ggacgacctc accgaggtgc tatgcagcgg ggccggcggg
780
gtccacagtg ggggcagtgg ggatggggcc ggcagcgggg gcccgggagc acagaaccac
840
gtgaaggaga gatgagcccc ccgggccgga caggggcaca cgtgtgcaaa gagacggtgg
900
tgtgtgttct ctcctgcatc tgcgtgtgca cacatgtgct gggccctctc agacctcacc
960
acacgcgt
968

<210> 4534
<211> 284
<212> PRT
<213> Homo sapiens

<400> 4534
Thr Arg Ala Gln His Met Cys Ala His Ala Asp Ala Gly Glu Asn Thr
1   5   10   15
His His Arg Leu Phe Ala His Val Cys Pro Cys Pro Asp Ala Gly Ala
            20   25   30
Glu Ala Asp Arg Val Gly Gln Arg Ala Arg Arg Pro Arg Ala Ala Met
        35   40   45
Asp Trp Leu Met Gly Lys Ser Lys Ala Lys Pro Asn Gly Lys Lys Pro
    50   55   60
Ala Ala Glu Glu Arg Lys Ala Tyr Leu Glu Pro Glu His Thr Lys Ala
65   70   75   80
Arg Ile Thr Asp Phe Gln Phe Lys Glu Leu Val Val Leu Pro Arg Glu
                85   90   95
Ile Asp Leu Asn Glu Trp Leu Ala Ser Asn Thr Thr Thr Phe Phe His
                100   105   110
His Ile Asn Leu Gln Tyr Ser Thr Ile Ser Glu Phe Cys Thr Gly Glu

```
                    115                      120                      125
Thr Cys Gln Thr Met Ala Val Cys Asn Thr Gln Tyr Tyr Trp Tyr Asp
        130                      135                      140
Glu Arg Gly Lys Lys Val Lys Cys Thr Ala Pro Gln Tyr Val Asp Phe
145                      150                      155                      160
Val Met Ser Ser Val Gln Lys Leu Val Thr Asp Glu Asp Val Phe Pro
                    165                      170                      175
Thr Lys Tyr Gly Arg Glu Phe Pro Ser Ser Phe Glu Ser Leu Val Arg
                    180                      185                      190
Lys Ile Cys Arg His Leu Phe His Val Leu Ala His Ile Tyr Trp Ala
                    195                      200                      205
His Phe Lys Glu Thr Leu Ala Leu Glu Leu His Gly His Leu Asn Thr
        210                      215                      220
Leu Tyr Val His Phe Ile Leu Phe Ala Arg Glu Phe Asn Leu Leu Asp
225                      230                      235                      240
Pro Lys Glu Thr Ala Ile Met Asp Asp Leu Thr Glu Val Leu Cys Ser
                    245                      250                      255
Gly Ala Gly Gly Val His Ser Gly Gly Ser Gly Asp Gly Ala Gly Ser
                    260                      265                      270
Gly Gly Pro Gly Ala Gln Asn His Val Lys Glu Arg
                    275                      280
```

```
<210> 4535
<211> 473
<212> DNA
<213> Homo sapiens

<400> 4535
cgactttttt tttttttttt ttttgagatg gagtctcgtt ctgtcaccca ggctggagtg
60
cagtggcatg atcacagctc actgcaacct ctgcctccca ggttcaagca gttctctngc
120
ctcagcctcc cgagtagctg ggattacagg cgtccgccac cacgcccggc taattttttgt
180
attttttagta gaaacggggt ttcaccatct cggccaggct ggtcttgaac tcctgacctc
240
atgatccatc cgccttggcc tcccaaagtg ctgggattac aggcatgagc taccgcgccc
300
ggccttggct gcagattaac gggaatacct cccttgggct tcctaggtga cactgtgata
360
ttcggtatga cctcccttgc tctattcctt ggaagaagta caggcactgg tcaagagtgc
420
ccgggaccca cattgcctgg ttttgaatcc cagcacctcc acatgttacg cgt
473
```

```
<210> 4536
<211> 75
<212> PRT
<213> Homo sapiens

<400> 4536
Arg Leu Phe Phe Phe Phe Phe Phe Glu Met Glu Ser Arg Ser Val Thr
1                        5                        10                      15
Gln Ala Gly Val Gln Trp His Asp His Ser Ser Leu Gln Pro Leu Pro
```

```
                    20                    25                    30
        Pro Arg Phe Lys Gln Phe Ser Xaa Leu Ser Leu Pro Ser Ser Trp Asp
               35                    40                    45
        Tyr Arg Arg Pro Pro Pro Arg Pro Ala Asn Phe Cys Ile Phe Ser Arg
              50                    55                    60
        Asn Gly Val Ser Pro Ser Arg Pro Gly Trp Ser
        65                    70                    75
```

```
<210> 4537
<211> 2811
<212> DNA
<213> Homo sapiens
```

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<400> 4537
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60
ctggcttttt acctagcaaa gacaactgag gctgaggaag tctttgtgcc agttttaaat
120
ataaaacgtt ctgaactacc tctgcgaggt gacattgtct tctttcttca gaaggttcat
180
attccagaga gtatcttgat ttttcgggat gagattgacc tccatgcatt ataccaggct
240
ggccaactca ccctcatcct tgtcgaccat catatcttat ccaaaagtga cacagcccta
300
gaggagngca gtagcagagg tgctagacca tcgacccatc gagccgaaac actgccctcc
360
ctgnnccatg tttcagttga gctggtgggg tcctgtgcta ccctggtgac cgagagaatc
420
ctgcagggggg caccagagat cttggacagg caaactgcag cccttctgca tggaaccatc
480
atcctggact gtgtcaacat ggaccttaaa attggaaagg caaccccaaa ggacagcaaa
540
tatgtggaga aactagaggc ccttttccca gacctaccca agagaaatga tatatttgat
600
tccctacaaa aggcaaagtt tgatgtatca ggactgacca ctgagcagat gctgagaaaa
660
gaccagaaga ctatctatag acaaggcgtc aaggtggcca ttagtgcaat atatatggat
720
ttggaggcct ttctgcagag gtctaacctc cttgcagatc tccatgcttt ctgccaggct
780
cacagctatg atgtcctggt tgccatgact atctttttca acactcacaa tgagccagtg
840
cggcagttgg ctattttctg tccccatgtg gcactccaaa caacgatctg tgaagtcctg
900
gaacgctccc actctccacc cctgaagctg accctgcct caagtaccca ccctaacctc
960
catgcctatc ttcaaggcaa cacccaggtc tctcgaaaga aacttctgcc cctgctccag
1020
gaagccctgt cagcatattt tgactccatg aagatccctt caggacagcc tgagacagca
1080
gatgtgtcca gggagcaagt ggacaaggaa ttggacaggg caagtaactc cctgatttct
1140
ggactgagtc aagatgagga ggaccctccg ctgcccccga cgcccatgaa cagcttggtg
1200
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gatgagtgcc ctctagatca ggggctgcct aaactctctg ctgaggccgt cttcgagaag
1260
tgcagtcaga tctcactgtc acagtctacc acagcctccc tgtccaagaa gtgactgttg
1320
agaggcgagg aggtagtggg tgaggctacc tgactcactt caaatgcatg ttttgagatg
1380
tttggagatt cagcaattct gtcttcattg ctccaggatc tggtatactg ttctcataaa
1440
actgagagga gaaaaaagt gaaagaaagc agctgcttta agaatggttt tccacctttt
1500
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1560
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1620
ttagacccca aaagtgtcct cggcatggat cttgaacaga accagtatct gtcatggaac
1680
tgaacattca tcgatggtct ccatgtattc atttattcac ttgttcattc aagtatttat
1740
tgaatacctg cctcaagcta gagagaaaag agagtgcgct ttggaaattt attccagttt
1800
tcagcctaca gcagattatc agctcggtga cttttctttc tgccaccatt taggtgatgg
1860
tgtttgattc agagatggct gaatttctat tcttagctta ttgtgactgt ttcagatcta
1920
gtttgggaac agattagagg ccattgtctt ctgtcctgat caggtggcct ggctgtttct
1980
ttggatccct ctgtcccaga gccacccaga accctgactc ttgagaatca agaaaacacc
2040
cagaaaggcc ttaatgacct cataggcact cttccaaaaa gacaacagaa ctggaatgag
2100
aggcctgggt ctgtctcctg ccttagcagg cctatcaatt tcttgtcaat ctcttttttt
2160
ccttgctcac attaaaagga agcatggagt tctaatgctc ccataaacta tgtattttgg
2220
caagacactt cactactcca ggtctcactt tccccatctg taaaacaggg tttggactag
2280
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2340
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2400
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2460
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2520
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2580
caacagtttc actgaacagt ggggtatgtg atggttttgg catgacatct tcagtatgag
2640
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2700
agtggtgtga tcatgaacca aaggaattta tgttttgtaa cttgggtact ttattttgca
2760
ttttgttata ctattaaata atttttttcct gttaaaaaaa aaaaaaaaa a
2811
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<210> 4538
<211> 437
<212> PRT
<213> Homo sapiens

<400> 4538
Xaa Ala Trp His Glu Gly Asn Glu Ala Cys Asp Leu Asp Ser Thr Val
1   5   10   15
Ser Ala Leu Ala Leu Ala Phe Tyr Leu Ala Lys Thr Thr Glu Ala Glu
            20   25   30
Glu Val Phe Val Pro Val Leu Asn Ile Lys Arg Ser Glu Leu Pro Leu
        35   40   45
Arg Gly Asp Ile Val Phe Phe Leu Gln Lys Val His Ile Pro Glu Ser
    50   55   60
Ile Leu Ile Phe Arg Asp Glu Ile Asp Leu His Ala Leu Tyr Gln Ala
65   70   75   80
Gly Gln Leu Thr Leu Ile Leu Val Asp His His Ile Leu Ser Lys Ser
            85   90   95
Asp Thr Ala Leu Glu Glu Xaa Ser Ser Arg Gly Ala Arg Pro Ser Thr ..
            100   105   110
His Arg Ala Glu Thr Leu Pro Ser Leu Xaa His Val Ser Val Glu Leu
    115   120   125
Val Gly Ser Cys Ala Thr Leu Val Thr Glu Arg Ile Leu Gln Gly Ala
    130   135   140
Pro Glu Ile Leu Asp Arg Gln Thr Ala Ala Leu Leu His Gly Thr Ile
145   150   155   160
Ile Leu Asp Cys Val Asn Met Asp Leu Lys Ile Gly Lys Ala Thr Pro
            165   170   175
Lys Asp Ser Lys Tyr Val Glu Lys Leu Glu Ala Leu Phe Pro Asp Leu
            180   185   190
Pro Lys Arg Asn Asp Ile Phe Asp Ser Leu Gln Lys Ala Lys Phe Asp
    195   200   205
Val Ser Gly Leu Thr Thr Glu Gln Met Leu Arg Lys Asp Gln Lys Thr
    210   215   220
Ile Tyr Arg Gln Gly Val Lys Val Ala Ile Ser Ala Ile Tyr Met Asp
225   230   235   240
Leu Glu Ala Phe Leu Gln Arg Ser Asn Leu Leu Ala Asp Leu His Ala
            245   250   255
Phe Cys Gln Ala His Ser Tyr Asp Val Leu Val Ala Met Thr Ile Phe
            260   265   270
Phe Asn Thr His Asn Glu Pro Val Arg Gln Leu Ala Ile Phe Cys Pro
    275   280   285
His Val Ala Leu Gln Thr Thr Ile Cys Glu Val Leu Glu Arg Ser His
    290   295   300
Ser Pro Pro Leu Lys Leu Thr Pro Ala Ser Ser Thr His Pro Asn Leu
305   310   315   320
His Ala Tyr Leu Gln Gly Asn Thr Gln Val Ser Arg Lys Lys Leu Leu
            325   330   335
Pro Leu Leu Gln Glu Ala Leu Ser Ala Tyr Phe Asp Ser Met Lys Ile
            340   345   350
Pro Ser Gly Gln Pro Glu Thr Ala Asp Val Ser Arg Glu Gln Val Asp
            355   360   365
Lys Glu Leu Asp Arg Ala Ser Asn Ser Leu Ile Ser Gly Leu Ser Gln

```
       370                   375                   380
Asp Glu Glu Asp Pro Pro Leu Pro Pro Thr Pro Met Asn Ser Leu Val
385                   390                   395                   400
Asp Glu Cys Pro Leu Asp Gln Gly Leu Pro Lys Leu Ser Ala Glu Ala
                405                   410                   415
Val Phe Glu Lys Cys Ser Gln Ile Ser Leu Ser Gln Ser Thr Thr Ala
                420                   425                   430
Ser Leu Ser Lys Lys
        435
```

```
<210> 4539
<211> 331
<212> DNA
<213> Homo sapiens
```

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<400> 4539
gtgcacggag gaaagtctca tgagcagcct gaatgggggc tctgttcctt ctgagctgga
60
tgggctggac tccgagaaag accagaagcc tggggaaaa ccaaagggta atcaatgaac
120
tcacctggaa actccagcaa gagcagaggc aggtggagga gctgaggatg cagcttcaga
180
agcagaaaag gaataactgt tcagagaaga agccgctgcc tttcctggct gcctccatca
240
agcaagaaga ggctgtctcc agctgtcctt ttgcatccca agtacctgtg aaaagacaaa
300
gcagcagctc aaagtgtcac ccaccggctt g
331
```

```
<210> 4540
<211> 99
<212> PRT
<213> Homo sapiens
```

```
<400> 4540
Met Gly Ala Leu Phe Leu Leu Ser Trp Met Gly Trp Thr Pro Arg Lys
  1               5                  10                  15
Thr Arg Ser Leu Gly Glu Asn Gln Arg Val Ile Asn Glu Leu Thr Trp
                20                  25                  30
Lys Leu Gln Gln Glu Gln Arg Gln Val Glu Glu Leu Arg Met Gln Leu
        35                  40                  45
Gln Lys Gln Lys Arg Asn Asn Cys Ser Glu Lys Lys Pro Leu Pro Phe
    50                  55                  60
Leu Ala Ala Ser Ile Lys Gln Glu Glu Ala Val Ser Ser Cys Pro Phe
65                  70                  75                  80
Ala Ser Gln Val Pro Val Lys Arg Gln Ser Ser Ser Ser Lys Cys His
                85                  90                  95
Pro Pro Ala
```

```
<210> 4541
<211> 452
<212> DNA
<213> Homo sapiens
```

<400> 4541
actagtcacc tcttctatca gatgatcatc tggatcatat tctttagat taataatggc
60
cacaggcaga tccagggatg taactgcttc agcaagaact gttgcgaatc ccttcgctgt
120
tccagtctga gaaccataaa aaatcttcac tccagacaca aagatgtctt tctcttgaag
180
ggagacataa ccatttgtca tcaaatcctg agctgctttt ggaacagatt tttcctgtaa
240
gttcttgccc tgcgtcttga tgacaatctg gacacaaatc caaaggctaa tgctaacagc
300
aaagcccaaa taaatgtaaa acctgtttat ccacaatgat attaaaggtg agaagaggtc
360
ccatgtatcc gcagagggat ccatcctcct cagagccgac aggagactag gatctcggac
420
ctggagagcc cgatgattcg cactggtact gc
452

<210> 4542
<211> 128
<212> PRT
<213> Homo sapiens

<400> 4542
Met Asp Pro Ser Ala Asp Thr Trp Asp Leu Phe Ser Pro Leu Ile Ser
 1   5   10   15
Leu Trp Ile Asn Arg Phe Tyr Ile Tyr Leu Gly Phe Ala Val Ser Ile
            20   25   30
Ser Leu Trp Ile Cys Val Gln Ile Val Ile Lys Thr Gln Gly Lys Asn
        35   40   45
Leu Gln Glu Lys Ser Val Pro Lys Ala Ala Gln Asp Leu Met Thr Asn
    50   55   60
Gly Tyr Val Ser Leu Gln Glu Lys Asp Ile Phe Val Ser Gly Val Lys
65   70   75   80
Ile Phe Tyr Gly Ser Gln Thr Gly Thr Ala Lys Gly Phe Ala Thr Val
                85   90   95
Leu Ala Glu Ala Val Thr Ser Leu Asp Leu Pro Val Ala Ile Ile Asn
            100   105   110
Leu Lys Glu Tyr Asp Pro Asp Asp His Leu Ile Glu Glu Val Thr Ser
        115   120   125

<210> 4543
<211> 815
<212> DNA
<213> Homo sapiens

<400> 4543
cggccgccga ggactggcct gactcggaca tttcatcctg tggacactaa ggccaaacac
60
agggaggagg gagagcgagt cactgcaggt ccctggcctg cggctccgcc gtggctgcct
120
gaggccccgc gcaccaatgc tttgcacttt gcctcgcccg acaccctgcg ggccagagct
180

```
cctctgccgc ccaccgggct aacccttccg ggcctcacca ctcccgagtg gctctgctta
240
tccggccact gactccggct cctcggaagc agggccaccc tcctgaaatg gcttggaacg
300
gggctttcca ctggtgccct ccccagacga ttgcttgtaa tgggccagtg cctcgccagg
360
gacacagcgg cagcccctg tagcttgtgg ctgttcagaa acaagtccag cccaggtagg
420
gcagagggct ctgactgggg acccaagaag ggctggctgt gccgccaccg ctgccccgtc
480
accatcactg tgctgaagag ctcgaggctg ggcccacccg cgccggcccc acgttcctcc
540
ccgggctcag gtcagggcca gggagtgacc agaaggtgct gaccctgtgg cctgactggc
600
ccagagctca cccctgaaca tgagcaagcg caaagaaacc cccatccctg ctcccaaaaa
660
agggcgcccc caaggccatt ttgaaggtgg ggggaagccc ggattccgag aaaccgcaac
720
cagccgtcta cctcaggaag ctcgctaggg aggagcgcat tctatgtgac taatgcggac
780
tggcctgcac cgcctacgga gagaagacaa cgcgt
815
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```
<210> 4544
<211> 150
<212> PRT
<213> Homo sapiens

<400> 4544
Met Val Thr Gly Gln Arg Trp Arg His Ser Gln Pro Phe Leu Gly Pro
1               5                   10                  15
Gln Ser Glu Pro Ser Ala Leu Pro Gly Leu Asp Leu Phe Leu Asn Ser
            20                  25                  30
His Lys Leu Gln Gly Ala Ala Ala Val Ser Leu Ala Arg His Trp Pro
            35                  40                  45
Ile Thr Ser Asn Arg Leu Gly Arg Ala Pro Val Glu Ser Pro Val Pro
        50                  55                  60
Ser His Phe Arg Arg Val Ala Leu Leu Pro Arg Ser Arg Ser Gln Trp
65                  70                  75                  80
Pro Asp Lys Gln Ser His Ser Gly Val Val Arg Pro Gly Arg Val Ser
                85                  90                  95
Pro Val Gly Gly Arg Gly Ala Leu Ala Arg Arg Val Ser Gly Glu Ala
            100                 105                 110
Lys Cys Lys Ala Leu Val Arg Gly Ala Ser Gly Ser His Gly Gly Ala
            115                 120                 125
Ala Gly Gln Gly Pro Ala Val Thr Arg Ser Pro Ser Ser Leu Cys Leu
        130                 135                 140
Ala Leu Val Ser Thr Gly
145                 150

<210> 4545
<211> 3568
<212> DNA
<213> Homo sapiens
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<400> 4545
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tcaaagagtc agtcagaaga acaggaagag cctgctaaaa ctgatcaggc tgtcagcaaa
120
gacagaaatg cagaggagaa aaagcgttta tctcttcagc gagaaaagat tatcgcaagg
180
gtgagtattg ataacaggac ccgggcatta gttcaggcat taagaagaac aactgaccca
240
aagctctgca ttactagggt tgaagaactg acttttcatc ttctagaatt tcctgaagga
300
aaaggagtgg ctgtcaagga aagaattatt ccatatttat tacgactgag acaaattaag
360
gatgaaactc ttcaggctgc agttagagaa attttggccc taattggcta tgtggatcca
420
gtgaaaggga gaggaatccg aattctctca attgatggtg gaggaacaag gggcgtggtt
480
gctctccaga ccctacgaaa attagttgaa cttactcaga agccagttca tcagctcttt
540
gattacattt gtggtgtaag cacaggtgcc atattagctt tcatgttggg gttgtttcat
600
atgcccttgg atgaatgtga ggaactttat cgaaaattag gatcagatgt attttcacaa
660
aatgtcattg ttggaacagt aaaaatgagt tggagccatg cattttatga cagtcaaaca
720
tgggaaaaca ttcttaagga taggatggga tctgcactga tgattgaaac agcaagaaac
780
cccacatgtc ctaaggtagc tgctgtaagt accatagtaa atagagggat aacacccaaa
840
gcttttgtgt tcagaaacta tggtcatttt cctggaatca actctcatta tttgggaggc
900
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960
gaatatgcat tgggaaatga tcttcatcaa gatggaggtt tgcttctgaa taacccttcg
1020
gcattagcta tgcatgagtg taaatgtctt tggccagatg tgccgttaga gtgcatagta
1080
tccctgggca ctggacgtta tgagagtgat gtgagaaaca cggtaacata cacaagcttg
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aaaactaaac tttctaatgt tatcaacagt gctacagata cagaagaagt ccatataatg
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1260
atacctctag atgaaagtcg aaatgaaaag ctggatcagc tgcagttgga agggttgaaa
1320
tacatagaaa gaaatgaaca aaaaatgaaa aaagttgcaa aaatattaag tcaagaaaaa
1380
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1440
ccattctttt caaaattgtg atgagtatat gcttatgttc tcataaatga aggtctgttt
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agaagatcaa ccacattcaa taaggaattg tggggttcga catgagttaa ctttgaaata
1560

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cgtatgaatt ctggagaatc ctgaaaaaga cggtgcttca accagcttgc atagcacaga
1620
gaatattctt ggttacagaa ttcatatggg aactaggctt ttaagatgtt aataattagc
1680
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1860
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1920
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1980
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2040
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2100
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2160
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2220
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2280
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2340
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2400
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2520
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2580
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2640
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2700
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3000
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3060
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3120
aagaaattat attcaggcat attaagcatt gagtgtcatt attattgatg tataatggat
3180
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tcccatccaa cattatggtg tgattttaaa agaagagcca ggaaatcaaa agtattttct
3240
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3300
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3360
attgactatt cacatttcct tagatatatt tatttgaatg atggcttcta caaagtagag
3420
aagtctgtca ttatgagaga taaagccagc tgggcttctg ggttgggtgg ggtcttggag
3480
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caatcagcac tctgtgtcta gctaaagg
3568

<210> 4546
<211> 380
<212> PRT
<213> Homo sapiens

<400> 4546
Glu Arg Ile Ile Pro Tyr Leu Leu Arg Leu Arg Gln Ile Lys Asp Glu
 1   5   10   15
Thr Leu Gln Ala Ala Val Arg Glu Ile Leu Ala Leu Ile Gly Tyr Val
                20   25   30
Asp Pro Val Lys Gly Arg Gly Ile Arg Ile Leu Ser Ile Asp Gly Gly
            35   40   45
Gly Thr Arg Gly Val Val Ala Leu Gln Thr Leu Arg Lys Leu Val Glu
        50   55   60
Leu Thr Gln Lys Pro Val His Gln Leu Phe Asp Tyr Ile Cys Gly Val
65   70   75   80
Ser Thr Gly Ala Ile Leu Ala Phe Met Leu Gly Leu Phe His Met Pro
                85   90   95
Leu Asp Glu Cys Glu Glu Leu Tyr Arg Lys Leu Gly Ser Asp Val Phe
            100   105   110
Ser Gln Asn Val Ile Val Gly Thr Val Lys Met Ser Trp Ser His Ala
            115   120   125
Phe Tyr Asp Ser Gln Thr Trp Glu Asn Ile Leu Lys Asp Arg Met Gly
        130   135   140
Ser Ala Leu Met Ile Glu Thr Ala Arg Asn Pro Thr Cys Pro Lys Val
145   150   155   160
Ala Ala Val Ser Thr Ile Val Asn Arg Gly Ile Thr Pro Lys Ala Phe
                165   170   175
Val Phe Arg Asn Tyr Gly His Phe Pro Gly Ile Asn Ser His Tyr Leu
            180   185   190
Gly Gly Cys Gln Tyr Lys Met Trp Gln Ala Ile Arg Ala Ser Ser Ala
            195   200   205
Ala Pro Gly Tyr Phe Ala Glu Tyr Ala Leu Gly Asn Asp Leu His Gln
        210   215   220
Asp Gly Gly Leu Leu Leu Asn Asn Pro Ser Ala Leu Ala Met His Glu
225   230   235   240
Cys Lys Cys Leu Trp Pro Asp Val Pro Leu Glu Cys Ile Val Ser Leu
                245   250   255
Gly Thr Gly Arg Tyr Glu Ser Asp Val Arg Asn Thr Val Thr Tyr Thr

```
                    260                   265                   270
   Ser Leu Lys Thr Lys Leu Ser Asn Val Ile Asn Ser Ala Thr Asp Thr
            275                   280                   285
   Glu Glu Val His Ile Met Leu Asp Gly Leu Leu Pro Pro Asp Thr Tyr
        290                   295                   300
   Phe Arg Phe Asn Pro Val Met Cys Glu Asn Ile Pro Leu Asp Glu Ser
   305                   310                   315                   320
   Arg Asn Glu Lys Leu Asp Gln Leu Gln Leu Glu Gly Leu Lys Tyr Ile
                325                   330                   335
   Glu Arg Asn Glu Gln Lys Met Lys Lys Val Ala Lys Ile Leu Ser Gln
            340                   345                   350
   Glu Lys Thr Thr Leu Gln Lys Ile Asn Asp Trp Ile Lys Leu Lys Thr
            355                   360                   365
   Asp Met Tyr Glu Gly Leu Pro Phe Phe Ser Lys Leu
        370                   375                   380
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<210> 4547
<211> 2211
<212> DNA
<213> Homo sapiens

<400> 4547

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120
cacagttcga cgaatcggca tggtgctatc ttctaccttc tctgagctcg gcggctggga
180
ctggaggaca gcggtggcgg aggcgactag cggcggcggg agcggcgccg agaggccgtg
240
cgggacgcgg gcgccaggac cggccgaacg cagaggttga ttcttcacca cactgaaacc
300
attaggaaaa atccttgtgg ttaacagcag aggcttcaga gtgtaacctg tactcgggcc
360
tagaaattat ttaaaatggc gactgatacg tctcaaggtg aactcgtcca tcctaaggca
420
ctcccactta tagtaggagc tcagctgatc cacgcggaca agttaggtga gaaggtagaa
480
gatagcacca tgccgattcg tcgaactgtg aattctaccc gggaaactcc tcccaaaagc
540
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720
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960
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<210> 4548
<211> 515
<212> PRT
<213> Homo sapiens

<400> 4548
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                20                  25                  30
Val Ser Thr Val Glu Glu Gln Glu Asn Glu Thr Pro Pro Ala Thr Ser
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         35                      40                      45
Ser Glu Ala Glu Gln Pro Lys Gly Glu Pro Glu Asn Glu Glu Lys Glu
   50                      55                      60
Glu Asn Lys Ser Ser Glu Glu Thr Lys Lys Asp Glu Lys Asp Gln Ser
65                      70                      75                      80
Lys Glu Lys Glu Lys Lys Val Lys Lys Thr Ile Pro Ser Trp Ala Thr
                   85                      90                      95
Leu Ser Ala Ser Gln Leu Ala Arg Ala Gln Lys Gln Thr Pro Met Ala
                   100                     105                     110
Ser Ser Pro Arg Pro Lys Met Asp Ala Ile Leu Thr Glu Ala Ile Lys
                   115                     120                     125
Ala Cys Phe Gln Lys Ser Gly Ala Ser Val Val Ala Ile Arg Lys Tyr
   130                     135                     140
Ile Ile His Lys Tyr Pro Ser Leu Glu Leu Glu Arg Arg Gly Tyr Leu
145                     150                     155                     160
Leu Lys Gln Ala Leu Lys Arg Glu Leu Asn Arg Gly Val Ile Lys Gln
                   165                     170                     175
Val Leu His Asn Val Lys Gly Lys Gly Ala Ser Gly Ser Phe Val Val
                   180                     185                     190
Val Gln Lys Ser Arg Lys Thr Pro Gln Lys Ser Arg Asn Arg Lys Asn
                   195                     200                     205
Arg Ser Ser Ala Val Asp Pro Glu Pro Gln Val Lys Leu Glu Asp Val
   210                     215                     220
Leu Pro Leu Ala Phe Thr Arg Leu Cys Glu Pro Lys Glu Ala Ser Tyr
225                     230                     235                     240
Ser Leu Ile Arg Lys Tyr Val Ser Gln Tyr Tyr Pro Lys Leu Arg Val
                   245                     250                     255
Asp Ile Arg Pro Gln Leu Leu Lys Asn Ala Leu Gln Arg Ala Val Glu
                   260                     265                     270
Arg Gly Gln Leu Glu Gln Ile Thr Gly Lys Gly Ala Ser Gly Thr Phe
   275                     280                     285
Gln Leu Lys Lys Ser Gly Glu Lys Pro Leu Leu Gly Gly Ser Leu Met
   290                     295                     300
Glu Tyr Ala Ile Leu Ser Ala Ile Ala Ala Met Asn Glu Pro Lys Thr
305                     310                     315                     320
Cys Ser Thr Thr Ala Leu Lys Lys Tyr Val Leu Glu Asn His Pro Gly
                   325                     330                     335
Thr Asn Ser Asn Tyr Gln Met His Leu Leu Lys Lys Thr Leu Gln Lys
                   340                     345                     350
Cys Glu Lys Asn Gly Trp Met Glu Gln Ile Ser Gly Lys Gly Phe Ser
                   355                     360                     365
Gly Thr Phe Gln Leu Cys Phe Pro Tyr Tyr Pro Ser Pro Gly Val Leu
   370                     375                     380
Phe Pro Lys Lys Glu Pro Asp Asp Ser Arg Asp Glu Asp Glu Asp Glu
385                     390                     395                     400
Asp Glu Ser Ser Glu Glu Asp Ser Glu Asp Glu Glu Pro Pro Pro Lys
                   405                     410                     415
Arg Arg Leu Gln Lys Lys Thr Pro Ala Lys Ser Pro Gly Lys Ala Ala
                   420                     425                     430
Ser Val Lys Gln Arg Gly Ser Lys Pro Ala Pro Lys Val Ser Ala Ala
                   435                     440                     445
Gln Arg Gly Lys Ala Arg Pro Leu Pro Lys Lys Ala Pro Pro Lys Ala
   450                     455                     460
Lys Thr Pro Ala Lys Lys Thr Arg Pro Ser Ser Thr Val Ile Lys Lys
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465                470                475                480
Pro Ser Gly Gly Ser Ser Lys Lys Pro Ala Thr Ser Ala Arg Lys Glu
                485                490                495
Val Lys Leu Pro Gly Lys Gly Lys Ser Thr Met Lys Lys Ser Phe Arg
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Val Lys Lys
        515
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<210> 4549
<211> 2927
<212> DNA
<213> Homo sapiens

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120
ggggagacca acttgaagtt cagacaggcc ctgatggtca cccacaaaga actggccact
180
ataaagaaga tggcgtcctt tcaaggcaca gtgacgtgtg aggcgcctaa cagtcggatg
240
caccacttcg tggggtgcct ggaatggaat gacaagaaat actccctgga cattggcaac
300
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420
catttgaaga gaaccaagct ggacctcctg atgaacaagc tggtggttgt gatcttcatc
480
tccgtggtgc ttgtctgcct ggtgttggcc ttcggcttcg gtttctcagt caaagaattc
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720
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900
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1200
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2820
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2927

<210> 4550
<211> 908
<212> PRT
<213> Homo sapiens

<400> 4550

Asp	Leu	Cys	Val	Gly	Asp	Val	Val	Cys	Leu	Arg	Lys	Asp	Asn	Ile	Val
1				5					10					15	

| Pro | Ala | Asp | Met | Leu | Leu | Leu | Ala | Ser | Thr | Glu | Pro | Ser | Ser | Leu | Cys |
| | | 20 | | | | | 25 | | | | | 30 | | | |

Tyr Val Glu Thr Val Asp Ile Asp Gly Glu Thr Asn Leu Lys Phe Arg
         35   40   45

Gln Ala Leu Met Val Thr His Lys Glu Leu Ala Thr Ile Lys Lys Met
     50   55   60

Ala Ser Phe Gln Gly Thr Val Thr Cys Glu Ala Pro Asn Ser Arg Met
65   70   75   80

His His Phe Val Gly Cys Leu Glu Trp Asn Asp Lys Lys Tyr Ser Leu
               85   90   95

Asp Ile Gly Asn Leu Leu Leu Arg Gly Cys Arg Ile Arg Asn Thr Asp
             100   105   110

Thr Cys Tyr Gly Leu Val Ile Tyr Ala Asp Gly Tyr Met Phe Val Gly
     115   120   125

Phe Asp Thr Lys Ile Met Lys Asn Cys Gly Lys Ile His Leu Lys Arg
     130   135   140

Thr Lys Leu Asp Leu Leu Met Asn Lys Leu Val Val Val Ile Phe Ile
145   150   155   160

Ser Val Val Leu Val Cys Leu Val Leu Ala Phe Gly Phe Gly Phe Ser
             165   170   175

Val Lys Glu Phe Lys Asp His His Tyr Tyr Leu Ser Gly Val His Gly
             180   185   190

Ser Ser Val Ala Ala Glu Ser Phe Phe Val Phe Trp Ser Phe Leu Ile
     195   200   205

Leu Leu Ser Val Thr Ile Pro Met Ser Met Phe Ile Leu Ser Glu Phe
     210   215   220

Ile Tyr Leu Gly Asn Ser Val Phe Ile Asp Trp Asp Val Gln Met Tyr
225   230   235   240

Tyr Lys Pro Gln Asp Val Pro Ala Lys Ala Arg Ser Thr Ser Leu Asn
             245   250   255

Asp His Leu Gly Gln Val Glu Tyr Ile Phe Ser Asp Lys Thr Gly Thr
             260   265   270

Leu Thr Gln Asn Ile Leu Thr Phe Asn Lys Cys Cys Ile Ser Gly Arg
     275   280   285

Val Tyr Gly Glu Pro Leu Pro Leu Glu Gln Val Arg Arg Arg Glu Ala
     290   295   300

Ala Leu Pro Gln Cys Gly Pro Ala Ala Pro Arg Ala Asp Gln Arg Gly
305   310   315   320

Arg Gly Arg Ala Gly Val Leu Ala Pro Ala Gly His Leu Pro His Gly
             325   330   335

Asp Asp Gln Leu Leu Tyr Gln Ala Ala Ser Pro Asp Glu Gly Ala Leu

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              340                    345                    350
Val Thr Ala Ala Arg Asn Phe Gly Tyr Val Phe Leu Ser Arg Thr Gln
          355                    360                    365
Asp Thr Val Thr Ile Met Glu Leu Gly Glu Glu Arg Val Tyr Gln Val
      370                    375                    380
Leu Ala Ile Met Asp Phe Asn Ser Thr Arg Lys Arg Met Ser Val Leu
385                    390                    395                    400
Val Arg Lys Pro Glu Gly Ala Ile Cys Leu Tyr Thr Lys Gly Ala Asp
              405                    410                    415
Thr Val Ile Phe Glu Arg Leu His Arg Arg Gly Ala Met Glu Phe Ala
          420                    425                    430
Thr Glu Glu Ala Leu Ala Ala Phe Ala Gln Glu Thr Leu Arg Thr Leu
          435                    440                    445
Cys Leu Ala Tyr Arg Glu Val Ala Glu Asp Ile Tyr Glu Asp Trp Gln
      450                    455                    460
Gln Arg His Gln Glu Ala Ser Leu Leu Leu Gln Asn Arg Ala Gln Ala
465                    470                    475                    480
Leu Gln Gln Val Tyr Asn Glu Met Glu Gln Asp Leu Arg Leu Leu Gly
              485                    490                    495
Ala Thr Ala Ile Glu Asp Arg Leu Gln Asp Gly Val Pro Glu Thr Ile
          500                    505                    510
Lys Cys Leu Lys Lys Ser Asn Ile Lys Ile Trp Val Leu Thr Gly Asp
          515                    520                    525
Lys Gln Glu Thr Ala Val Asn Ile Gly Phe Ala Cys Glu Leu Leu Ser
      530                    535                    540
Glu Asn Met Leu Ile Leu Glu Glu Lys Glu Ile Ser Arg Ile Leu Glu
545                    550                    555                    560
Thr Tyr Trp Glu Asn Ser Asn Asn Leu Leu Thr Arg Glu Ser Leu Ser
              565                    570                    575
Gln Val Lys Leu Ala Leu Val Ile Asn Gly Asp Phe Leu Asp Lys Leu
          580                    585                    590
Leu Val Ser Leu Arg Lys Glu Pro Arg Ala Leu Ala Gln Asn Val Asn
          595                    600                    605
Met Asp Glu Ala Trp Gln Glu Leu Gly Gln Ser Arg Arg Asp Phe Leu
      610                    615                    620
Tyr Ala Arg Arg Leu Ser Leu Leu Cys Arg Arg Phe Gly Leu Pro Leu
625                    630                    635                    640
Ala Ala Pro Pro Ala Gln Asp Ser Arg Ala Arg Arg Ser Ser Glu Val
              645                    650                    655
Leu Gln Glu Arg Ala Phe Val Asp Leu Ala Ser Lys Cys Gln Ala Val
          660                    665                    670
Ile Cys Cys Arg Val Thr Pro Lys Gln Lys Ala Leu Ile Val Ala Leu
          675                    680                    685
Val Lys Lys Tyr His Gln Val Val Thr Leu Ala Ile Gly Asp Gly Ala
      690                    695                    700
Asn Asp Ile Asn Met Ile Lys Thr Ala Asp Val Gly Val Gly Leu Ala
705                    710                    715                    720
Gly Gln Glu Gly Met Gln Ala Val Gln Asn Ser Asp Phe Val Leu Gly
              725                    730                    735
Gln Phe Cys Phe Leu Gln Arg Leu Leu Leu Val His Gly Arg Trp Ser
          740                    745                    750
Tyr Val Arg Ile Cys Lys Phe Leu Arg Tyr Phe Phe Tyr Lys Ser Met
      755                    760                    765
Ala Ser Met Met Val Gln Val Trp Phe Ala Cys Tyr Asn Gly Phe Thr
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```
        770                    775                   780
Gly Gln Asp Val Ser Ala Glu Gln Ser Leu Glu Lys Pro Glu Leu Tyr
785                    790                   795                   800
Val Val Gly Gln Lys Asp Glu Leu Phe Asn Tyr Trp Val Phe Val Gln
                   805                   810                   815
Ala Ile Ala His Gly Val Thr Thr Ser Leu Val Asn Phe Phe Met Thr
                   820                   825                   830
Leu Trp Ile Ser Arg Asp Thr Ala Gly Pro Ala Ser Phe Ser Asp His
               835                    840                   845
Gln Ser Phe Ala Val Val Val Ala Leu Ser Cys Leu Leu Ser Ile Thr
           850                    855                   860
Met Glu Val Ile Leu Ile Ile Lys Tyr Trp Thr Ala Leu Cys Val Ala
865                    870                   875                   880
Thr Ile Leu Leu Ser Leu Gly Phe Tyr Ala Ile Met Thr Thr Thr Thr
               885                    890                   895
Gln Ser Phe Trp Leu Phe Arg Met Pro Thr Ser Ala
           900                    905
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<210> 4551
<211> 361
<212> DNA
<213> Homo sapiens

<400> 4551
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120
caggcagggg tggctttgcc tgtctcagag caggcctcag cagcacactg tccagtacca
180
ggcatcagtg agggtccaag aacttgcagc cagcagggac gacagggcag ggcccccagg
240
agagacccca cacagcgcac atgggagagt ggatgccaaa ggtgggcagc ggggagggcg
300
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360
c
361


<210> 4552
<211> 100
<212> PRT
<213> Homo sapiens

<400> 4552
Met Glu Gly Pro Ser Val Arg Val Arg Thr Gly Gly Arg Gly Ser Arg
1                   5                   10                  15
Ala Leu Gln Gly Gln Ala Gly Val Ala Leu Pro Val Ser Glu Gln Ala
               20                  25                  30
Ser Ala Ala His Cys Pro Val Pro Gly Ile Ser Glu Gly Pro Arg Thr
           35                  40                  45
Cys Ser Gln Gln Gly Arg Gln Gly Arg Ala Pro Arg Arg Asp Pro Thr
       50                  55                  60
Gln Arg Thr Trp Glu Ser Gly Cys Gln Arg Trp Ala Ala Gly Arg Ala
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```
65                  70                  75                  80
Pro Ala Lys Gln Ser Leu Cys Gly Val Pro His Ala Ala Glu Val Ser
                85                  90                  95
Val Arg Cys Trp
            100
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<210> 4553

<211> 2970

<212> DNA

<213> Homo sapiens

<400> 4553

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120
tgcaattgtg gcactggcac ttatttcagt gaagaaaaac tttgtggttc tatggcattc
180
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240
tgactgtgga atccttaagg gcccattaca tttctgaaga agaaagctaa gatgaaggac
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atgccactcc gaattcatgt gctacttggc ctagctatca ctacactagt acaagctgta
360
gataaaaaag tggattgtcc acggttatgt acgtgtgaaa tcaggccttg gtttacaccc
420
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720
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780
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1020
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1080
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1140
ctacacttaa aagagttggg gataaataat atgcctgagc tgatttccat cgatagtctt
1200
gctgtggata acctgccaga tttaagaaaa atagaagcta ctaacaaccc tagattgtct
1260
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1380
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2760
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2820
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2880
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2970

<210> 4554
<211> 705
<212> PRT
<213> Homo sapiens

<400> 4554
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Val Gln Ala Val Asp Lys Lys Val Asp Cys Pro Arg Leu Cys Thr Cys
            20   25   30
Glu Ile Arg Pro Trp Phe Thr Pro Arg Ser Ile Tyr Met Glu Ala Ser
        35   40   45
Thr Val Asp Cys Asn Asp Leu Gly Leu Leu Thr Phe Pro Ala Arg Leu
    50   55   60
Pro Ala Asn Thr Gln Ile Leu Leu Leu Gln Thr Asn Asn Ile Ala Lys
65   70   75   80
Ile Glu Tyr Ser Thr Asp Phe Pro Val Asn Leu Thr Gly Leu Asp Leu
                85   90   95
Ser Gln Asn Asn Leu Ser Ser Val Thr Asn Ile Asn Val Lys Lys Met
            100   105   110
Pro Gln Leu Leu Ser Val Tyr Leu Glu Glu Asn Lys Leu Thr Glu Leu
        115   120   125
Pro Glu Lys Cys Leu Ser Glu Leu Ser Asn Leu Gln Glu Leu Tyr Ile
    130   135   140
Asn His Asn Leu Leu Ser Thr Ile Ser Pro Gly Ala Phe Ile Gly Leu
145   150   155   160
His Asn Leu Leu Arg Leu His Leu Asn Ser Asn Arg Leu Gln Met Ile
            165   170   175
Asn Ser Lys Trp Phe Asp Ala Leu Pro Asn Leu Glu Ile Leu Met Ile
            180   185   190
Gly Glu Asn Pro Ile Ile Arg Ile Lys Asp Met Asn Phe Lys Pro Leu
            195   200   205
Ile Asn Leu Arg Ser Leu Val Ile Ala Gly Ile Asn Leu Thr Glu Ile
    210   215   220
Pro Asp Asn Ala Leu Val Gly Leu Glu Asn Leu Glu Ser Ile Ser Phe
225   230   235   240
Tyr Asp Asn Arg Leu Ile Lys Val Pro His Val Ala Leu Gln Lys Val
            245   250   255
Val Asn Leu Lys Phe Leu Asp Leu Asn Lys Asn Pro Ile Asn Arg Ile
            260   265   270
Arg Arg Gly Asp Phe Ser Asn Met Leu His Leu Lys Glu Leu Gly Ile
            275   280   285
Asn Asn Met Pro Glu Leu Ile Ser Ile Asp Ser Leu Ala Val Asp Asn
    290   295   300
Leu Pro Asp Leu Arg Lys Ile Glu Ala Thr Asn Asn Pro Arg Leu Ser
305   310   315   320
Tyr Ile His Pro Asn Ala Phe Phe Arg Leu Pro Lys Leu Glu Ser Leu
            325   330   335
Met Leu Asn Ser Asn Ala Leu Ser Ala Leu Tyr His Gly Thr Ile Glu

```
                340                     345                     350
Ser Leu Pro Asn Leu Lys Glu Ile Ser Ile His Ser Asn Pro Ile Arg
        355                     360                     365
Cys Asp Cys Val Ile Arg Trp Met Asn Met Asn Lys Thr Asn Ile Arg
        370                     375                     380
Phe Met Glu Pro Asp Ser Leu Phe Cys Val Asp Pro Pro Glu Phe Gln
385                     390                     395                 400
Gly Gln Asn Val Arg Gln Val His Phe Arg Asp Met Met Glu Ile Cys
                405                     410                     415
Leu Pro Leu Ile Ala Pro Glu Ser Phe Pro Ser Asn Leu Asn Val Glu
                420                     425                     430
Ala Gly Ser Tyr Val Ser Phe His Cys Arg Ala Thr Ala Glu Pro Gln
                435                     440                     445
Pro Glu Ile Tyr Trp Ile Thr Pro Ser Gly Gln Lys Leu Leu Pro Asn
        450                     455                     460
Thr Leu Thr Asp Lys Phe Tyr Val His Ser Glu Gly Thr Leu Asp Ile
465                     470                     475                 480
Asn Gly Val Thr Pro Lys Glu Gly Gly Leu Tyr Thr Cys Ile Ala Thr
                485                     490                     495
Asn Leu Val Gly Ala Asp Leu Lys Ser Val Met Ile Lys Val Asp Gly
                500                     505                     510
Ser Phe Pro Gln Asp Asn Asn Gly Ser Leu Asn Ile Lys Ile Arg Asp
                515                     520                     525
Ile Gln Ala Asn Ser Val Leu Val Ser Trp Lys Ala Ser Ser Lys Ile
        530                     535                     540
Leu Lys Ser Ser Val Lys Trp Thr Ala Phe Val Lys Thr Glu Asn Ser
545                     550                     555                 560
His Ala Ala Gln Ser Ala Arg Ile Pro Ser Asp Val Lys Val Tyr Asn
                565                     570                     575
Leu Thr His Leu Asn Pro Ser Thr Glu Tyr Lys Ile Cys Ile Asp Ile
                580                     585                     590
Pro Thr Ile Tyr Gln Lys Asn Arg Lys Lys Cys Val Asn Val Thr Thr
        595                     600                     605
Lys Gly Leu His Pro Asp Gln Lys Glu Tyr Glu Lys Asn Asn Thr Thr
        610                     615                     620
Thr Leu Met Ala Cys Leu Gly Gly Leu Leu Gly Ile Ile Gly Val Ile
625                     630                     635                 640
Cys Leu Ile Ser Cys Leu Ser Pro Glu Met Asn Cys Asp Gly Gly His
                645                     650                     655
Ser Tyr Val Arg Asn Tyr Leu Gln Lys Pro Thr Phe Ala Leu Gly Glu
                660                     665                     670
Leu Tyr Pro Pro Leu Ile Asn Leu Trp Glu Ala Gly Lys Glu Lys Ser
                675                     680                     685
Thr Ser Leu Lys Val Lys Ala Thr Val Ile Gly Leu Pro Thr Asn Met
        690                     695                     700
Ser
705
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<210> 4555
<211> 1128
<212> DNA
<213> Homo sapiens

<400> 4555
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120
tggcccacct gggtgggagg ctgccaccgc ggcctgatca tgccctctgt gcccacacag
180
gtctctgagc ggcccctgat gttcctgttg acactcctg gcgtgctggc tcctcggatt
240
gaaagtgtgg agacaggcct gaagctggcc ctgtgtggaa cggtgctgga ccacctggtc
300
ggggaggaga ccatggctga ctacctgctg tacaccctca acaaacacca gcgctttggg
360
tgagtgcagc actacggcct gggcagtgcc tgtgacaacg tagagcgcgt gctgaagagt
420
gtggctgtga agctggggaa gacgcagaag gtgaaggtgc tcacgggcac gggtaacgtg
480
aacgttattc agcctaacta tcctgcggca gcccgtgact tcctgcagac tttccgccgt
540
gggctgctgg gttccgtgat gctggacctc gacgtcctgc ggggccaccc cccggctgag
600  .    ..
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660
tgacctgggt ggttgaggct caagacagct cacccggtcc agaagctcca tgctggtcac
720
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780
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900
aggagttaaa gctataacct gtaacctta aaatctccag ttaaagggcc tgtttcttac
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1020
gaacctaaga aatgagcagg ttggcagcta gggtttgtgt tggaggcttt cggtccagtg
1080
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1128


<210> 4556
<211> 67
<212> PRT
<213> Homo sapiens

<400> 4556
Met Pro Ser Val Pro Thr Gln Val Ser Glu Arg Pro Leu Met Phe Leu
  1               5                  10                  15
Leu Asp Thr Pro Gly Val Leu Ala Pro Arg Ile Glu Ser Val Glu Thr
                 20                  25                  30
Gly Leu Lys Leu Ala Leu Cys Gly Thr Val Leu Asp His Leu Val Gly
          35          .          40                  45
Glu Glu Thr Met Ala Asp Tyr Leu Leu Tyr Thr Leu Asn Lys His Gln
       50                  55                  60
Arg Phe Gly
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65

<210> 4557
<211> 446
<212> DNA
<213> Homo sapiens

<400> 4557
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gcctgtccct ctcctctcct cacccctgct cccagcaagg ccgtccgttg tgcccaagac
120
catctaggac attctcatcc ccctgagacc tcaagggcct tcctgcctcc tccctcagac
180
gtgagggtga gatcctgcct ctaccattgg agcgccacag cccacctgcc tcctctgtca
240
aaaaaacctc cttgtaccat ctctcacttg agacctctgc taggcctgcc tcctccatct
300
gacctccaca tcccatcagc agccaccctg ggccctgca tgcactggcc tcctccctca
360
gacgctcctt gcaccatatc acttgcatta gacgctctcc taggcctgcc tcccccctca
420
gaccaccaca tcacatctac acgcgt
446

<210> 4558
<211> 148
<212> PRT
<213> Homo sapiens

<400> 4558
Xaa Arg Val His Arg Lys Arg Cys Gln Asp Ser Leu Gly Ser Pro Arg
1   5   10   15
Arg Ala Gly Met Ala Cys Pro Ser Pro Leu Leu Thr Pro Ala Pro Ser
            20   25   30
Lys Ala Val Arg Cys Ala Gln Asp His Leu Gly His Ser His Pro Pro
        35   40   45
Glu Thr Ser Arg Ala Phe Leu Pro Pro Pro Ser Asp Val Arg Val Arg
    50   55   60
Ser Cys Leu Tyr His Trp Ser Ala Thr Ala His Leu Pro Pro Leu Ser
65   70   75   80
Lys Lys Pro Pro Cys Thr Ile Ser His Leu Arg Pro Leu Leu Gly Leu
                85   90   95
Pro Pro Pro Ser Asp Leu His Ile Pro Ser Ala Ala Thr Leu Gly Pro
            100   105   110
Cys Met His Trp Pro Pro Pro Ser Asp Ala Pro Cys Thr Ile Ser Leu
        115   120   125
Ala Leu Asp Ala Leu Leu Gly Leu Pro Pro Pro Ser Asp His His Ile
    130   135   140
Thr Ser Thr Arg
145

<210> 4559
<211> 919

<212> DNA
<213> Homo sapiens

<400> 4559
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120
gctcctgtcc cctaggattg acaaaccaag ggctcagggc tcagctgtgt gccacgcagc
180
ggctgctgtg aggtgtgttc tggtagaagg ggtcagctga ggtcagggtt cttcccacgt
240
ggggatgcag gtgccgcagg ctctccatgg ggttgggggt ggcctccatg cagctgaccg
300
gctggctgag ggcgtagcct cctggcatct ggggctggat gccacctcga gtccagcctt
360
cctggtctag acccttgggg atgttctcaa agtacccttg gttgtaggtg gtcaggtatc
420
gctgatccct gtcaggatca cagggggctcc ggacatacat ggggttgtta aggctgaacc
480
ctgtgggctc ctttttcccc acagtctccc ggccaagcag ggcaacgttt gtctgttgca
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tccgatgaag tggctgaaac tgctggtgac tcacgctgct gggttctggg cagggagggg
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gcactctggg gttcagaatc ctttcattcc ctcggctgaa ggctgtttcc cgcttggagc
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780
ggttggaaga caatggggct ctggtgggac tgtttggtga agccactccc ctcctttgcg
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900
ttgtactccg acgtcatga
919

<210> 4560
<211> 126
<212> PRT
<213> Homo sapiens

<400> 4560
Met Gln Gln Thr Asn Val Ala Leu Leu Gly Arg Glu Thr Val Gly Lys
1   5   10   15
Lys Glu Pro Thr Gly Phe Ser Leu Asn Asn Pro Met Tyr Val Arg Ser
            20   25   30
Pro Cys Asp Pro Asp Arg Asp Gln Arg Tyr Leu Thr Thr Tyr Asn Gln
        35   40   45
Gly Tyr Phe Glu Asn Ile Pro Lys Gly Leu Asp Gln Glu Gly Trp Thr
    50   55   60
Arg Gly Gly Ile Gln Pro Gln Met Pro Gly Gly Tyr Ala Leu Ser Gln
65   70   75   80
Pro Val Ser Cys Met Glu Ala Thr Pro Asn Pro Met Glu Ser Leu Arg

```
                    85                  90                  95
His Leu His Pro His Val Gly Arg Thr Leu Thr Ser Ala Asp Pro Phe
          100                 105                 110
Tyr Gln Asn Thr Pro His Ser Ser Arg Cys Val Ala His Ser
      115                 120                 125
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<210> 4561
<211> 4172
<212> DNA
<213> Homo sapiens

<400> 4561

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120
gcgacagtgt cttgccgggg agtagtagcc gggctggtaa ctggagtttg agattaggag
180
actttcagac ccttgtgcac aaagagcagg atgaagttaa aggaagtaga tcgtacagcc
240
atgcaggcat ggagccctgc ccagaatcac cccatttacc tagcaacagg aacatctgct
300
cagcaattgg atgcaacatt tagtacgaat gcttcccttg agatatttga attagacctc
360
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420
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540
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600
aacattttcc agactaatct ggtagcttct ggtgctaatg aatctgaaat ctacatatgg
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720
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1080
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1140
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1200
tattctatca tgggaggaag cacagatggt ttaagacaga aacaagttga caagctttca
1260
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1980
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2880
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4080
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4172


<210> 4562
<211> 1182
<212> PRT
<213> Homo sapiens


<400> 4562
Met Lys Leu Lys Glu Val Asp Arg Thr Ala Met Gln Ala Trp Ser Pro
1               5                   10                  15
Ala Gln Asn His Pro Ile Tyr Leu Ala Thr Gly Thr Ser Ala Gln Gln
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                   20                      25                      30
Leu Asp Ala Thr Phe Ser Thr Asn Ala Ser Leu Glu Ile Phe Glu Leu
           35                      40                      45
Asp Leu Ser Asp Pro Ser Leu Asp Met Lys Ser Cys Ala Thr Phe Ser
       50                      55                      60
Ser Ser His Arg Tyr His Lys Leu Ile Trp Gly Pro Tyr Lys Met Asp
65                      70                      75                      80
Ser Lys Gly Asp Val Ser Gly Val Leu Ile Ala Gly Gly Glu Asn Gly
               85                      90                      95
Asn Ile Ile Leu Tyr Asp Pro Ser Lys Ile Ile Ala Gly Asp Lys Glu
               100                     105                     110
Val Val Ile Ala Gln Asn Asp Lys His Thr Gly Pro Val Arg Ala Leu
           115                     120                     125
Asp Val Asn Ile Phe Gln Thr Asn Leu Val Ala Ser Gly Ala Asn Glu
       130                     135                     140
Ser Glu Ile Tyr Ile Trp Asp Leu Asn Asn Phe Ala Thr Pro Met Thr
145                     150                     155                     160
Pro Gly Ala Lys Thr Gln Pro Pro Glu Asp Ile Ser Cys Ile Ala Trp
               165                     170                     175
Asn Arg Gln Val Gln His Ile Leu Ala Ser Ala Ser Pro Ser Gly Arg
               180                     185                     190
Ala Thr Val Trp Asp Leu Arg Glu Asn Glu Pro Ile Ile Lys Val Ser
           195                     200                     205
Asp His Ser Asn Arg Met His Cys Ser Gly Leu Ala Trp His Pro Asp-
       210                     215                     220
Val Ala Thr Gln Met Val Leu Ala Ser Glu Asp Asp Arg Leu Pro Val
225                     230                     235                     240
Ile Gln Met Trp Asp Leu Arg Phe Ala Ser Ser Pro Leu Arg Val Leu
               245                     250                     255
Glu Asn His Ala Arg Gly Ile Leu Ala Ile Ala Trp Ser Met Ala Asp
               260                     265                     270
Pro Glu Leu Leu Leu Ser Cys Gly Lys Asp Ala Lys Ile Leu Cys Ser
           275                     280                     285
Asn Pro Asn Thr Gly Glu Val Leu Tyr Glu Leu Pro Thr Asn Thr Gln
       290                     295                     300
Trp Cys Phe Asp Ile Gln Trp Cys Pro Arg Asn Pro Ala Val Leu Ser
305                     310                     315                     320
Ala Ala Ser Phe Asp Gly Arg Ile Ser Val Tyr Ser Ile Met Gly Gly
           325                     330                     335
Ser Thr Asp Gly Leu Arg Gln Lys Gln Val Asp Lys Leu Ser Ser Ser
           340                     345                     350
Phe Gly Asn Leu Asp Pro Phe Gly Thr Gly Gln Pro Leu Pro Pro Leu
       355                     360                     365
Gln Ile Pro Gln Gln Thr Ala Gln His Ser Ile Val Leu Pro Leu Lys
   370                     375                     380
Lys Pro Pro Lys Trp Ile Arg Arg Pro Val Gly Ala Ser Phe Ser Phe
385                     390                     395                     400
Gly Gly Lys Leu Val Thr Phe Glu Asn Val Arg Met Pro Ser His Gln
               405                     410                     415
Gly Ala Glu Gln Gln Gln Gln Gln His His Val Phe Ile Ser Gln Val
           420                     425                     430
Val Thr Glu Lys Glu Phe Leu Ser Arg Ser Asp Gln Leu Gln Gln Ala
       435                     440                     445
Val Gln Ser Gln Gly Phe Ile Asn Tyr Cys Gln Lys Lys Ile Asp Ala
```

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                 450                      455                      460
Ser Gln Thr Glu Phe Glu Lys Asn Val Trp Ser Phe Leu Lys Val Asn
465                      470                      475                      480
Phe Glu Asp Asp Ser Arg Gly Lys Tyr Leu Glu Leu Leu Gly Tyr Arg
                 485                      490                      495
Lys Glu Asp Leu Glu Lys Xaa Gln Asp Ile Lys Glu Glu Lys Glu Glu
                 500                      505                      510
Ser Glu Phe Leu Pro Ser Ser Gly Gly Thr Phe Asn Ile Ser Val Ser
                 515                      520                      525
Gly Asp Ile Asp Gly Leu Ile Thr Gln Ala Leu Leu Thr Gly Asn Phe
                 530                      535                      540
Glu Ser Ala Val Asp Leu Cys Leu His Asp Asn Arg Met Ala Asp Ala
545                      550                      555                      560
Ile Ile Leu Ala Ile Ala Gly Gly Gln Glu Leu Leu Ala Arg Thr Gln
                 565                      570                      575
Lys Lys Tyr Phe Ala Lys Ser Gln Ser Lys Ile Thr Arg Leu Ile Thr
                 580                      585                      590
Ala Val Val Met Lys Asn Trp Lys Glu Ile Val Glu Ser Cys Asp Leu
                 595                      600                      605
Lys Asn Trp Arg Glu Ala Leu Ala Ala Val Leu Thr Tyr Ala Lys Pro
                 610                      615                      620
Asp Glu Phe Ser Ala Leu Cys Asp Leu Leu Gly Thr Arg Leu Glu Asn
625                      630                      635                      640
Glu Gly Asp Ser Leu Leu Gln Thr Gln Ala Cys Leu Cys Tyr Ile Cys
                 645                      650                      655
Ala Gly Asn Val Glu Lys Leu Val Ala Cys Trp Thr Lys Ala Gln Asp
                 660                      665                      670
Gly Ser His Pro Leu Ser Leu Gln Asp Leu Ile Glu Lys Val Val Ile
                 675                      680                      685
Leu Arg Lys Ala Val Gln Leu Thr Gln Ala Met Asp Thr Ser Thr Val
                 690                      695                      700
Gly Val Leu Leu Ala Ala Lys Met Ser Gln Tyr Ala Asn Leu Leu Ala
705                      710                      715                      720
Ala Gln Gly Ser Ile Ala Ala Ala Leu Ala Phe Leu Pro Asp Asn Thr
                 725                      730                      735
Asn Gln Pro Asn Ile Met Gln Leu Arg Asp Arg Leu Cys Arg Ala Gln
                 740                      745                      750
Gly Glu Pro Val Ala Gly His Glu Ser Pro Lys Ile Pro Tyr Glu Lys
                 755                      760                      765
Gln Gln Leu Pro Lys Gly Arg Pro Gly Pro Val Ala Gly His His Gln
                 770                      775                      780
Met Pro Arg Val Gln Thr Gln Gln Tyr Tyr Pro His Gly Glu Asn Pro
785                      790                      795                      800
Pro Pro Pro Gly Phe Ile Met His Gly Asn Val Asn Pro Asn Ala Ala
                 805                      810                      815
Gly Gln Leu Pro Thr Ser Pro Gly His Met His Thr Gln Val Pro Pro
                 820                      825                      830
Tyr Pro Gln Pro Gln Pro Tyr Gln Pro Ala Gln Pro Tyr Pro Phe Gly
                 835                      840                      845
Thr Gly Gly Ser Ala Met Tyr Arg Pro Gln Gln Pro Val Ala Pro Pro
850                      855                      860
Thr Ser Asn Ala Tyr Pro Asn Thr Pro Tyr Ile Ser Ser Ala Ser Ser
865                      870                      875                      880
Tyr Thr Gly Gln Ser Gln Leu Tyr Ala Ala Gln His Gln Ala Ser Ser
```

```
                  885                 890                 895
Pro Thr Ser Ser Pro Ala Thr Ser Phe Pro Pro Pro Ser Ser Gly
             900                 905                 910
Ala Ser Phe Gln His Gly Gly Pro Gly Ala Pro Pro Ser Ser Ser Ala
         915                 920                 925
Tyr Ala Leu Pro Pro Gly Thr Thr Gly Thr Leu Pro Ala Ala Ser Glu
     930                 935                 940
Leu Pro Ala Ser Gln Arg Thr Gly Pro Gln Asn Gly Trp Asn Asp Pro
945                 950                 955                 960
Pro Ala Leu Asn Arg Val Pro Lys Lys Lys Met Pro Glu Asn Phe
             965                 970                 975
Met Pro Pro Val Pro Ile Thr Ser Pro Ile Met Asn Pro Leu Gly Asp
             980                 985                 990
Pro Gln Ser Gln Met Leu Gln Gln Gln Pro Ser Ala Pro Val Pro Leu
         995                 1000                1005
Ser Ser Gln Ser Ser Phe Pro Gln Pro His Leu Pro Gly Gly Gln Pro
    1010                1015                1020
Phe His Gly Val Gln Gln Pro Leu Gly Gln Thr Gly Met Pro Pro Ser
1025                1030                 1035                1040
Phe Ser Lys Pro Asn Ile Glu Gly Ala Pro Gly Ala Pro Ile Gly Asn
             1045                1050                1055
Thr Phe Gln His Val Gln Ser Leu Pro Thr Lys Lys Ile Thr Lys Lys
         1060                1065                1070
Pro Ile Pro Asp Glu His Leu Ile Leu Lys Thr Thr Phe Glu Asp Leu
         1075                1080                1085
Ile Gln Arg Cys Leu Ser Ser Ala Thr Asp Pro Gln Thr Lys Arg Lys
    1090                1095                1100
Leu Asp Asp Ala Ser Lys Arg Leu Glu Phe Leu Tyr Asp Lys Leu Arg
1105                1110                1115                1120
Glu Gln Thr Leu Ser Pro Thr Ile Thr Ser Gly Leu His Asn Ile Ala
             1125                1130                1135
Arg Ser Ile Glu Thr Arg Asn Tyr Ser Glu Gly Leu Thr Met His Thr
             1140                1145                1150
His Ile Val Ser Thr Ser Asn Phe Ser Glu Thr Ser Ala Phe Met Pro
         1155                1160                1165
Val Leu Lys Val Val Leu Thr Gln Ala Asn Lys Leu Gly Val
    1170                1175                1180
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<210> 4563
<211> 2037
<212> DNA
<213> Homo sapiens

<400> 4563
ctacttggtc tcctgctttc gcgacatggc cttcaatttt ggggctccct cgggcacctc
60
cggtaccgct gcagccaccg cggcccccgg ctgggtttgg aggatttggg acaacatcta
120
caactgcagg ttctgcattc agcttttctg ccccaactaa cacaggcact actggactct
180
ttggtggtac tcagaacaaa ggttttggat ttggtactgg ttttggcaca acaacgggaa
240
ctagtactgg tttaggtact ggtttgggaa ctggactggg atttggagga tttaatacac
300
```

```
agcagcagca gcaaactagc agtaggttat agttgcatgc ccagtaataa agatgaagat
360
gggctagtgg ttttagtttt caacaaaaaa gaaacagaga ttcgaagcca acaacaacag
420
ttggtagaat cattgcataa agttttggga ggaaaccaga cccttactgt aaatgtagag
480
ggcactaaaa cattgccaga tgatcagaca gaagttgtta tttatgttgt tgagcgttcg
540
ccaaatggta cttcaagaag agttccagct acaacgctat atgcccattt tgaacaagcc
600
aatataaaaa cacaattgca gcaacttggt gtaacccttt ctatgactag aacagaactt
660
tctcctgcac agatcagaca gcttttacag aatcctcctg ctggtgttga tcctattatc
720
tgggaacagg ccaaggtaga taaccctgat tctgaaaagt taattcctgt accaatggtg
780
ggttttaagg aacttctccg aagactgaag gttcaagatc agatgactaa gcagcatcaa
840
accagattag atatcatatc tgaagatatt agtgagctac aaaagaatca aactacatct
900
gtagccaaaa ttgcacaata caagaggaaa ctcatggatc tttcccatag aactttacag
960
gtcctaatca aacaggaaat tcaaaggaag agtggttatg ccattcaggc tgatgaagag
1020
cagttgcgag ttcagctgga tacgattcag ggtgaactaa atgcacctac tcagttcaag
1080
ggccgactaa atgaattgat gtctcaaatc aggatgcaga atcattttgg agcagtcaga
1140
tctgaagaaa ggtattacat agatgcagat ctgttacgag aaatcaagca gcatttgaaa
1200
caacaacagg aaggccttag ccatttgatt agcatcatta agacgatct agaagatata
1260
aagctggtcg aacatggatt gaatgaaacc atccacatca gaggtggtgt ctttagttga
1320
cagttcacaa acttgtgtaa aggtttgtga aatgcatctt cttactgcat cagaccttcc
1380
ttaagaatga aaccgaccac atggagggaa aaagaaaaca attctttctt ggattggttt
1440
tttgagaagt ttactgacaa attactgttc atcaaatctg aaatagtcac ctcacagctc
1500
ttcaaagaaa acctttgaaa gatttatatc taaaagctgt atttactta aaagaagtgc
1560
ataattacca aaattgtatg tactattgta cattttaca acagcatttt cttaaacata
1620
atctgtgttt aatgattatt gtccattgag cctgtactct gctttccata ccaagtaaat
1680
atgaaataat ctactttgca cataacagaa gaaactataa ttacttggct gttggagatt
1740
tgtacttgag tataaatgta caccagtttt tgtatttgtg aactcatctg tgggaggagt
1800
aaagaaaatc caaaagcatt taatgttttg tttttgttct ataaagatat gaaaatgtat
1860
ttttatatta ttttacttat ttggaattta cagagcacac ctaagcaatt aggatataac
1920
```

```
aaaactactt aaccattttt gcaaccattt tgtttttaa gccttttat ttctaaaaag
1980
atgaaaactt ataaataaat tcttaatttg taattacttt taaaaaaaaa aaaaaaa
2037
```

<210> 4564
<211> 354
<212> PRT
<213> Homo sapiens

<400> 4564

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Val Leu Val Trp Glu Leu Asp Trp Asp Leu Glu Asp Leu Ile His Ser
1               5                   10                  15
Ser Ser Ser Lys Leu Ala Val Gly Tyr Ser Cys Met Pro Ser Asn Lys
            20                  25                  30
Asp Glu Asp Gly Leu Val Val Leu Val Phe Asn Lys Lys Glu Thr Glu
        35                  40                  45
Ile Arg Ser Gln Gln Gln Gln Leu Val Glu Ser Leu His Lys Val Leu
    50                  55                  60
Gly Gly Asn Gln Thr Leu Thr Val Asn Val Glu Gly Thr Lys Thr Leu
65                  70                  75                  80
Pro Asp Asp Gln Thr Glu Val Val Ile Tyr Val Val Glu Arg Ser Pro
                85                  90                  95
Asn Gly Thr Ser Arg Arg Val Pro Ala Thr Thr Leu Tyr Ala His Phe
            100                 105                 110
Glu Gln Ala Asn Ile Lys Thr Gln Leu Gln Gln Leu Gly Val Thr Leu
            115                 120                 125
Ser Met Thr Arg Thr Glu Leu Ser Pro Ala Gln Ile Arg Gln Leu Leu
    130                 135                 140
Gln Asn Pro Pro Ala Gly Val Asp Pro Ile Ile Trp Glu Gln Ala Lys
145                 150                 155                 160
Val Asp Asn Pro Asp Ser Glu Lys Leu Ile Pro Val Pro Met Val Gly
                165                 170                 175
Phe Lys Glu Leu Leu Arg Arg Leu Lys Val Gln Asp Gln Met Thr Lys
            180                 185                 190
Gln His Gln Thr Arg Leu Asp Ile Ile Ser Glu Asp Ile Ser Glu Leu
            195                 200                 205
Gln Lys Asn Gln Thr Thr Ser Val Ala Lys Ile Ala Gln Tyr Lys Arg
    210                 215                 220
Lys Leu Met Asp Leu Ser His Arg Thr Leu Gln Val Leu Ile Lys Gln
225                 230                 235                 240
Glu Ile Gln Arg Lys Ser Gly Tyr Ala Ile Gln Ala Asp Glu Glu Gln
                245                 250                 255
Leu Arg Val Gln Leu Asp Thr Ile Gln Gly Glu Leu Asn Ala Pro Thr
                260                 265                 270
Gln Phe Lys Gly Arg Leu Asn Glu Leu Met Ser Gln Ile Arg Met Gln
            275                 280                 285
Asn His Phe Gly Ala Val Arg Ser Glu Glu Arg Tyr Tyr Ile Asp Ala
        290                 295                 300
Asp Leu Leu Arg Glu Ile Lys Gln His Leu Lys Gln Gln Gln Glu Gly
305                 310                 315                 320
Leu Ser His Leu Ile Ser Ile Ile Lys Asp Asp Leu Glu Asp Ile Lys
                325                 330                 335
Leu Val Glu His Gly Leu Asn Glu Thr Ile His Ile Arg Gly Gly Val
```

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         340             345             350
Phe Ser


<210> 4565
<211> 2344
<212> DNA
<213> Homo sapiens

<400> 4565
ntccggattg tcttggagaa cagtagccgg gaagacaaac atgaatgccc ctttggccgc
60
agtgccattg agctcaccaa aatgttctgt gaaatcctgc aggttgggga actaccaaat
120
gaaggacgca atgactacca cccgatgttc tttacccatg accgagcctt tgaagagctc
180
tttggaatct gcatccagct gttgaacaag acctggaagg agatgagggc aacagcagag
240
gacttcaaca aggttatgca agtcgtccga gagcaaatca ctcgagcttt gccctccaaa
300
cccaactctt tggatcagtt caagagcaaa ttgcgtagcc tgagttactc tgagattcta
360
cgactgcgcc agtctgagag gatgagtcag gatgacttcc agtccccgcc aattgtggag
420
ctgagggaga agatccagcc cgagatcctt gagctgatca agcagcagcg cctgaaccgg
480
ctctgtgagg gcagcagctt ccgaaagatt gggaaccgcc gaaggcaaga acggttctgg
540
tactgccggt tggcactgaa ccacaaggtc cttcactatg gtgacttgga tgacaaccca
600
caaggggagg tgacatttga atccctgcag gagaaaattc ctgttgcaga cattaaggcc
660
attgtcactg ggaaagattg tccccacatg aaagagaaaa gtgctctgaa acagaacaag
720
gaggtgttgg aattggcctt ctccatcctg tatgaccctg atgagacctt aaacttcatc
780
gcacctaata aatatgagta ctgcatctgg attgacggcc tcagtgccct tctggggaag
840
gacatgtcca gtgagctgac caagagtgac ctggacaccc tgctgagcat ggagatgaag
900
ctgcggctcc tggacctgga aacatccag attcccgaag ccccaccccc catccccaag
960
gagcccagca gctatgactt tgtctatcac tatggctgag cctggagcca gaaacgacgg
1020
tacccaggag aagggatttt gggcccagga gaaacactta cattctggtg ccttgtcttt
1080
tgcttgtaca gaatctgtag tgattttggt ggccagtaaa tgccagccat ttctcaaacc
1140
cacctcggac cacccagagt ttcctcttgg tccctgtcta ctaagagtca tgaaggcagg
1200
gtgctctgcc cactccatca ccatgaagcc tgggattggg ccacgaggaa caaacagcag
1260
atgcccttgc cttccagtcc aagaaactgc ttcttgaaat ggatttaaca acagccactc
1320
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accttttcct cctgagcctg ctctctgatc agctggatcc ccacgtgagc aacagctggc
1380
ccaggaaagg ctgcctgcag aggacaggtg tgttgggcgt gttgagagcc ttgaagtgac
1440
tacctgtatc ttagatctga gtacaagcct gaggcttttg cttttgtctt ttttgatgag
1500
ggctcactcc agcttcatat ggtgccaaga cgttgctgct tctgaggttg gctctaacat
1560
ctctggtctt tagagccacc agatctctct ggcccataca gatatcagag cagacggaaa
1620
tttctccctg caagcgctca gtctcatccc agcaagtcaa agacctcctg gccaagtcct
1680
gccctcttaa gtctccagga acgctgcagg gaaaacccag ctgaggcctg ggcctagact
1740
gtggtgaggt cactagattc tactgctctt cccccacatt aatacctttt ccttcctcag
1800
agagaaatct cccctaacct gaattgcagc cccctccagt ttgctttcct ttggccttcc
1860
agaccccagg aagttggcct tcccttccta gtgctatggt ttctgccatt ggccatgatt
1920
tcagggagct ggctgaggcc ggctgaggcc acacctgtgc cagtggggct tccctggtgc
1980
tgcagcactt gtaaaccaca cacacagcct ctctccctgg acatacgtta gcacattggc
2040
attcagtatt ggtggcctgg catggtaggt actacccaat gaagagtgta ctatatattt
2100
tcattactat aggccatact tatacagacg tgtatatata tttatataag atctacctat
2160
cttaggatgg aaccttgggg aaaaataaaa ttgaggggaa gtaaaaagta tgtaacactt
2220
ccagttgtga gccaagattg taaccagaga gcagccagga gcttcctgtc agtaaccatg
2280
ttttcaataa atactctttc atgtacaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa
2340
aaaa
2344

<210> 4566
<211> 247
<212> PRT
<213> Homo sapiens

<400> 4566
Met Gln Val Val Arg Glu Gln Ile Thr Arg Ala Leu Pro Ser Lys Pro
1   5   10   15
Asn Ser Leu Asp Gln Phe Lys Ser Lys Leu Arg Ser Leu Ser Tyr Ser
            20   25   30
Glu Ile Leu Arg Leu Arg Gln Ser Glu Arg Met Ser Gln Asp Asp Phe
        35   40   45
Gln Ser Pro Pro Ile Val Glu Leu Arg Glu Lys Ile Gln Pro Glu Ile
    50   55   60
Leu Glu Leu Ile Lys Gln Gln Arg Leu Asn Arg Leu Cys Glu Gly Ser
65   70   75   80
Ser Phe Arg Lys Ile Gly Asn Arg Arg Arg Gln Glu Arg Phe Trp Tyr

```
                         85                      90                      95
Cys Arg Leu Ala Leu Asn His Lys Val Leu His Tyr Gly Asp Leu Asp
            100                     105                     110
Asp Asn Pro Gln Gly Glu Val Thr Phe Glu Ser Leu Gln Glu Lys Ile
            115                     120                     125
Pro Val Ala Asp Ile Lys Ala Ile Val Thr Gly Lys Asp Cys Pro His
            130                     135                     140
Met Lys Glu Lys Ser Ala Leu Lys Gln Asn Lys Glu Val Leu Glu Leu
145                     150                     155                     160
Ala Phe Ser Ile Leu Tyr Asp Pro Asp Glu Thr Leu Asn Phe Ile Ala
                165                     170                     175
Pro Asn Lys Tyr Glu Tyr Cys Ile Trp Ile Asp Gly Leu Ser Ala Leu
                180                     185                     190
Leu Gly Lys Asp Met Ser Ser Glu Leu Thr Lys Ser Asp Leu Asp Thr
            195                     200                     205
Leu Leu Ser Met Glu Met Lys Leu Arg Leu Leu Asp Leu Glu Asn Ile
            210                     215                     220
Gln Ile Pro Glu Ala Pro Pro Pro Ile Pro Lys Glu Pro Ser Ser Tyr
225                     230                     235                     240
Asp Phe Val Tyr His Tyr Gly
                245
```

```
<210> 4567
<211> 1211
<212> DNA
<213> Homo sapiens

<400> 4567
gcggccgcct ccgcgatgcc gctgctcgtc gaggggcggc gagtgcggct gccgcagtca
60
gccggggacc tcgtccgagc ccacccgcct ttggaggaaa gagccagact tctcagaggt
120
cagtctgttc aacaagtggg accccagggc cttctgtatg ttcagcaaag agagcttgca
180
gtgacctccc caaaggatgg ctccatctcc attctgggtt ctgatgatgc cactacttgt
240
cacattgtgg tcctgaggca cacaggtaat ggggccacct gcttgacaca ttgtgacgga
300
accgacacca aagctgaggt ccccttgatc atgaactcca taaaatcctt ttctgaccac
360
gctcaatgtg gaaggtgaga tctacgctgc tctcataggc tggaagtaca ccttgttgga
420
ggcttcagtg acgacaggca gttgtcacaa aaactcactc atcaacttct tagtgaattt
480
gacaggcaag aagatgacat tcacttagtg acattatgtg tgacagaatt aaatgaccgg
540
gaagaaacg aaaaccactt tccagtaata tatggcattg ctgtcaacat taagactgca
600
gagatttaca gagcatcctt tcaagatcgg ggtccggagg agcagcttcg tgctgcgcga
660
actttagcag gaggaccaat gattagcatt tatgatgcag agacagaaca acttcgtata
720
ggaccgtact cctggacacc atttccacat gtggatttct ggttgcacca agatgacaag
780
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caaatactag agaatctttc cacttcgcct ctggctgagc caccccactt tgttgaacat
840
attagatcta ccttgatgtt tttaaaaaaa cacccatctc cagctcacac actgttttct
900
ggaaataaag ccctactcta caaaaaaaat gaagatggct tgtgggaaaa gatctcttct
960
ccaggaagtt aaaaaacatg aattaccaaa gaaagcacct tcttggcctg acagaccatt
1020
ggtggggctg gcacgaatcc agatctggaa cctacatctg ttgggtctta ggtcttctcc
1080
ttccttcctc agtgtttttc aaatgacttt catcaaatga ctttcaaaat aaaaccttat
1140
tttggcaaag gcaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa
1200
aaaaaaaaaa a
1211

<210> 4568
<211> 120
<212> PRT
<213> Homo sapiens

<400> 4568
Met Pro Leu Leu Val Glu Gly Arg Arg Val Arg Leu Pro Gln Ser Ala
 1   5   10   15
Gly Asp Leu Val Arg Ala His Pro Pro Leu Glu Glu Arg Ala Arg Leu
            20   25   30
Leu Arg Gly Gln Ser Val Gln Gln Val Gly Pro Gln Gly Leu Leu Tyr
         35   40   45
Val Gln Gln Arg Glu Leu Ala Val Thr Ser Pro Lys Asp Gly Ser Ile
      50   55   60
Ser Ile Leu Gly Ser Asp Asp Ala Thr Thr Cys His Ile Val Val Leu
65   70   75   80
Arg His Thr Gly Asn Gly Ala Thr Cys Leu Thr His Cys Asp Gly Thr
                85   90   95
Asp Thr Lys Ala Glu Val Pro Leu Ile Met Asn Ser Ile Lys Ser Phe
            100   105   110
Ser Asp His Ala Gln Cys Gly Arg
         115   120

<210> 4569
<211> 1797
<212> DNA
<213> Homo sapiens

<400> 4569
nttttttttt tttttttttt tttttttttt tttttttaa aaatcggcat gctcctttat
60
ttgttcagaa gagcagccag catcaccctc gccactcaaa cctggcacat acgcttcgga
120
gacaatggcc tcgggaccct catgctgctg ggcccaggag agacagttct gaggcagaaa
180
ctcggcgtcc aaggggggcc gcgggtcagg cactgtggtg aagggaacgc cggggagtcc
240

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ggccccacct tgcagctggg gacacggggg cgcaaacaga gggggcaggc tagtgtcccg
300
ctgccccagg aacagacctc agggccccag gagggtctgc aggcagctag gagcctgcca
360
agtgctggtg gaagtagagg ccgaaaaggc tggcgagcag ctggcaggca gccgtccacc
420
agatgaggta ggccaggacg ccacggagga agaggggagt aagcaggcca cccagggccc
480
cggcaatccg cgctgcagtc tgctggactt cgtcctcccc agagccgann tggggggcagc
540
gctggctgag ganntgggtc gggggatagt agaggagctg ggcccaggcc ccaggaatag
600
cctcccagcg tcttgagcag aagtgtgcag ttgagggtga ggatgagcgc gtcaggtact
660
gcaagctcac cacggtcaca tagcagtaga ctcggaccac cctctgctgg atttcacggg
720
cttcgatgcg gccagcctcc cttcgcagct gctccacccg ggccttggcc aggcacaggt
780
aggcctgcag gtggggccgg gtcaccgcca gccgcagcag gcacagcacc accagcaacc
840
agaggcgccc agagtcgaag gcagaatcgg acagcaggga gaaacgcgtc tnccccaaac
900
ggcggctggt gcaggaagtc ccgtgcaatg ggctttgtcc agagccacag gatgaacagg
960
ggagacagga agctggtgtg caggaggaac tgcagcatgg gtctgtcctc cgacatggtc
1020
agtgcgtccc ggtgggtctg ggccagccgc aggcctggga aggtgaggaa ggcacccagc
1080
acagagccca ccactgccag tcccacgcgg atagccagct tggccacagg aagcgcccag
1140
tcccagccct gcttcttcag aagtggctct aagttctggg tcatgctggc cagaccaggc
1200
tccaggccca gctcgagggt ctcctcccgc accacttgca ccagcatggc cagcagcagg
1260
aagaggaagg caaaggtgag gcagacagag cgctcacccc cctcctcggc gctgaagtac
1320
agccgtgtca ctgtcaggaa catcttgatg gagaaggtca ccgtgagcag gcaccagaac
1380
acagcaatgt tagtctcctt ggctggtccc agcatgtagt agtaggcctc tgtgaagagg
1440
tacacgccgc ccgagtacac agcaaagtcc acaaaccact ggtactccag gaagaagcgc
1500
aggaccaggg catccacggt cgtgaggggg caggtctcca gctggaacgg ggcatctcgg
1560
ggcacagaca gtggcttctc ctcactaagg ccattggccc accgctcttt cctgcctctg
1620
ggcctcggct tccccgccag ggcccgaagc tcctcctcag acgggtgctt gtatcggaac
1680
aaactgccgt tacagagcag ccagcgcgcg aaggagcagt gtggcgccag cctgtgcatg
1740
agggtggcag tgagcagggt caccaccagc tgtactccga ggaccgccat gacgcgt
1797
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<210> 4570

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<211> 141
<212> PRT
<213> Homo sapiens

<400> 4570
Xaa Phe Phe Phe Phe Phe Phe Phe Phe Phe Phe Phe Leu Lys Ile Gly
1               5                   10                  15
Met Leu Leu Tyr Leu Phe Arg Arg Ala Ala Ser Ile Thr Leu Ala Thr
            20                  25                  30
Gln Thr Trp His Ile Arg Phe Gly Asp Asn Gly Leu Gly Thr Leu Met
        35                  40                  45
Leu Leu Gly Pro Gly Glu Thr Val Leu Arg Gln Lys Leu Gly Val Gln
    50                  55                  60
Gly Gly Pro Arg Val Arg His Cys Gly Glu Gly Asn Ala Gly Glu Ser
65                  70                  75                  80
Gly Pro Thr Leu Gln Leu Gly Thr Arg Gly Arg Lys Gln Arg Gly Gln
                85                  90                  95
Ala Ser Val Pro Leu Pro Gln Glu Gln Thr Ser Gly Pro Gln Glu Gly
            100                 105                 110
Leu Gln Ala Ala Arg Ser Leu Pro Ser Ala Gly Gly Ser Arg Gly Arg
        115                 120                 125
Lys Gly Trp Arg Ala Ala Gly Arg Gln Pro Ser Thr Arg
    130                 135                 140

<210> 4571
<211> 1084
<212> DNA
<213> Homo sapiens

<400> 4571
ngcgcgccgc catgggcctg gccgggctgc aggagaacgt atttaccggg cagtcaaaga
60
tctattccta catgagcccg aacaaatgct ctggaatgcg tttccccctt caggaagaga
120
actcagttac acatcacgaa gtcaaatgcc aggggaaacc attagccgga atctacagga
180
aacgagaaga gaaaagaaat gctgggaacg cagtacggag cgccatgaag tccgaggaac
240
agaagatcaa agacgccagg aaaggtcccc tggtaccttt ccaaaccaa aaatctgaag
300
cagcagaacc tccaaaaact ccaccctcat cttgtgattc caccaatgca gccatcgcca
360
agcaagccct gaaaaagccc atcaagggca acaggcccc ccgaaaaaaa agctcaagga
420
aaaacgcaac agaatcgcaa acttacggat ttctaccctg tccgaggag ctccaggaag
480
agcaaagccg agctgcagtc tgaagaaagg aaaagaatag atgaattgat tgaaagtggg
540
aaggaagaag gaatgaagat tgacctcatc gatggcaaag gcaggggtgt gattgccacc
600
aagcagttct cccgggggtga ctttgtggtg aataccacg gggacctcat cgagatcacc
660
gacgccaaga aacgggaggc tctgtacgca caggacccctt ccacgggctg ctacatgtac
720
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```
tattttcagt atctgagcaa aacctactgg tgagtccact gttgcttaga gtggcttttc
780
tgtcctctgg gcagtgagga gaggccaaag ggccaggaac tcctgattct gtttggtggc
840
cagtcttttg gttttgttgt tgttgacttt ttttttttta tttttttgaga tggagtcttg
900
ctctgttgcc caggctggag tgcagtggtg tgatctcggc tcattgcaac ctcctctcag
960
gctcaaagaa ttctcctccc tcagcctcca gagtagccca gctaattttt ttttttctgta
1020
tttttagtag aggtggagtt ttgccacatt ggccaagctg tcttgaact cctgacctca
1080
gacc
1084
```

<210> 4572
<211> 126
<212> PRT
<213> Homo sapiens

<400> 4572

```
Lys Ser Pro Ser Arg Ala Asn Arg Pro Pro Glu Lys Lys Ala Gln Gly
1               5                   10                  15
Lys Thr Gln Gln Asn Arg Lys Leu Thr Asp Phe Tyr Pro Val Arg Arg
            20                  25                  30
Ser Ser Arg Lys Ser Lys Ala Glu Leu Gln Ser Glu Glu Arg Lys Arg
            35                  40                  45
Ile Asp Glu Leu Ile Glu Ser Gly Lys Glu Glu Gly Met Lys Ile Asp
        50                  55                  60
Leu Ile Asp Gly Lys Gly Arg Gly Val Ile Ala Thr Lys Gln Phe Ser
65                  70                  75                  80
Arg Gly Asp Phe Val Val Glu Tyr His Gly Asp Leu Ile Glu Ile Thr
                85                  90                  95
Asp Ala Lys Lys Arg Glu Ala Leu Tyr Ala Gln Asp Pro Ser Thr Gly
            100                 105                 110
Cys Tyr Met Tyr Tyr Phe Gln Tyr Leu Ser Lys Thr Tyr Trp
            115                 120                 125
```

<210> 4573
<211> 309
<212> DNA
<213> Homo sapiens

<400> 4573

```
cccggagatg gaggcctcca ggaccaagtc ggtgcttggg ggcttcccgg gcccaccggc
60
cccaagggag atgccggcag tcggggccca atggggatga gaggcccacc aggtccacag
120
ggcccccag ggagccctgg ccgggctgga gctgtgggca cccctggaaa aaggggacct
180
tctggcccac aaggccttct tggccccct gggcccccag ccctgttgg gccaccccat
240
gcccggatct cccagcatgg agatccattg ctgtccaaca ccttcactga gaccaacccc
300
```

```
ttcacgcgt
309


<210> 4574
<211> 103
<212> PRT
<213> Homo sapiens


<400> 4574
Pro Gly Asp Gly Gly Leu Gln Asp Gln Val Gly Ala Trp Gly Leu Pro
 1               5                  10                  15
Gly Pro Thr Gly Pro Lys Gly Asp Ala Gly Ser Arg Gly Pro Met Gly
            20                  25                  30
Met Arg Gly Pro Pro Gly Pro Gln Gly Pro Pro Gly Ser Pro Gly Arg
        35                  40                  45
Ala Gly Ala Val Gly Thr Pro Gly Lys Arg Gly Pro Ser Gly Pro Gln
    50                  55                  60
Gly Leu Leu Gly Pro Pro Gly Pro Pro Ala Pro Val Gly Pro Pro His
65                  70                  75                  80
Ala Arg Ile Ser Gln His Gly Asp Pro Leu Leu Ser Asn Thr Phe Thr
                85                  90                  95
Glu Thr Asn Pro Phe Thr Arg
                100


<210> 4575
<211> 1068
<212> DNA
<213> Homo sapiens


<400> 4575
nttttttttt tttaaatgag gtgactagga ggaggggccc cagctgccct gcattcactg
60
cactcaccca aagcgctggt gtttgttgag ggtgtacagc aggtagtcag ccatggtctc
120
ctccccgacc aggtggtcca gcaccgttcc acacagggcc agcttcaggc ctgtctccac
180
actttcaatc cgaggagcca gcacgccagg agtgtccaac aggaacatca ggggccgctc
240
agagacctga attttggaca tcacagctct ggtgatccca ggctcgccac ccaccctggt
300
ggctttccct ttcctgaggt gctgcctccg gagggagttg atgagggagg acttgcccac
360
gttggggacc ccaatgacca tgatacagta ctccaggttc tcttttcggt ggtagcggtg
420
gcttctccca atcagttcag tgaccatcgg gatgatctgc ttgacatttt catcctttac
480
acagttggta aaaatgacat tttttaggcc ttctccttct aagtgttgca taattttctg
540
ctgctctgta agatccgcca agtccatctt gttgaggacc agcaagtgag gcttaagccc
600
aagggtttcc tgaaacagag ggttgcggcc tgaaagtggg atccgggcat cgtggacctc
660
gatgatacag .tccaccagct tcaggctgct ctgcatcttc ttcagcccct tggccatgtg
720
```

gcccgggaac cagcgcgcca cgtcgcgacc gcacaggggg aagttctccc gccaggcggc
780
ctgggcggcg ctgcacagcg cgcgcggggt caatctcatg gcggcaccgt ccccggaaac
840
gctcccgcag ctgaccttct cgctctgtcg cccaggctgg aacgcagtgg cacaatctca
900
actcactgca agctccgcct cccgggttca cgccattctc ctgcctcagc ctcctaagtg
960
gctgggacta caggtgcccg ccaccacacc cacctaattt tcgtattttt agtagagacg
1020
gggtttcacc gtttcagcaa gaatggtctc aatctcctga cctcatga
1068

<210> 4576
<211> 107
<212> PRT
<213> Homo sapiens

<400> 4576
Lys Trp Asp Pro Gly Ile Val Asp Leu Asp Asp Thr Val His Gln Leu
1   5   10   15
Gln Ala Ala Leu His Leu Leu Gln Pro Leu Gly His Val Ala Arg Glu
                20   25   30
Pro Ala Arg His Val Ala Thr Ala Gln Gly Glu Val Leu Pro Pro Gly
            35   40   45
Gly Leu Gly Gly Ala Ala Gln Arg Ala Arg Gly Gln Ser His Gly Gly
        50   55   60
Thr Val Pro Gly Asn Ala Pro Ala Ala Asp Leu Leu Ala Leu Ser Pro
65   70   75   80
Arg Leu Glu Arg Ser Gly Thr Ile Ser Thr His Cys Lys Leu Arg Leu
                85   90   95
Pro Gly Ser Arg His Ser Pro Ala Ser Ala Ser
            100   105

<210> 4577
<211> 3525
<212> DNA
<213> Homo sapiens

<400> 4577
nggcaaggaa ataattattc tgattggtga aactcccagc tcaaaattag agttgtatta
60
ctaacgaaga agagactggc tatggaggga cacgatttca gaggtgcttc tgagctgctc
120
gtgctgacct cagccctgtc cttcctgcag accctgctga aggtcgtgta cgtggagaat
180
gacatccagc acctgcagga catgtcacac ttcccagacc gggggagcga gaatgggaca
240
cccatggacg tgaaagccgg ggtgcgggtc atgcaggtca gtcctgacgg ccagcatttg
300
gcttcaggcg accgaagtgg aaatctgagg caagtgggcc ctggcagtgt ccagtgtaca
360
cctcccagct ccagctcagg ttctcagggc agtgggcaga gccctggcc ttggcacctc
420

ctgctgccca ttgggaatga ggggctgatc cacgagctgc acttcatgga cgagctggtc
480
aaggtggagg cccatgatgc tgaggtgctg tgcctggagt actccaagcc agagacgggg
540
ctgaccttgc tggcctcagc cagtcgggac cggctgatcc atgtgctgaa cgtggagaag
600
aactacaacc tggagcagac gctggatgac cactcctcct ccatcaccgc catcaagttc
660
gctggcaaca gagacatcca gatgatcagc tgtggggctg acaagagcat ctactttcgc
720
agtgcccagc agggttcgga tggactacac tttgtccgta cccaccacgt agcagagaaa
780
accaccttgt atgacatgga cattgacatc acccagaagt acgtggccgt ggcctgccag
840
gaccgcaatg tgagagtcta caacactgtg aacgggaagc agaagaagtg ctacaagggc
900
tcccagggtg acgaagggtc cttgctgaag gtccatgtgg acccctcagg caccttcctg
960
gccaccagct gctctgacaa aagcatctca gtgattgact tttactcggg cgagtgcatt
1020
gccaagatgt ttggccattc aggtgggtgt gcctctctgc ttgggatgcc tccccacccg
1080
cccacaccct ctgactccga aggcaagtgc agcctctctg ctttgtttgc agaaattatt
1140
accagcatga gttcaccta tgactgtcat cacttgatca cagtatctgg agacagctgc
1200
gtgttcatct ggcacctggg cccggagatc accaactgca tgaagcagca cttgctggag
1260
attgaccacc ggcagcagca gcagcacaca aatgacaaga agcggagtgg ccaccccagg
1320
tcctggcagc ccctgcctgt ccaccagagg gatgagtccc tgccagggcc ccatggagtg
1380
atgctgggga cacaatcctc gttgcctgct aaccaacggc aagctgccac tgtgggcaaa
1440
gcggctgggg acgatgatgt ggcagatggc ttggccttcc acgccaagcg cagctaccag
1500
ccccacggcc gctgggcaga gcgggccggc caagagcccc tcaagaccat cctggatgcc
1560
caggacctgg attgctactt tacccccatg aagcccgaga gtctggagaa ctccattctg
1620
gattcactgg agccacagag cctggccagc ctgctgagtg agcagaagga atcatctgag
1680
gccagtgagc tcatcctcta ctctctggag gcagaagtga cagtcacagg gacagacagc
1740
cagtattgca ggaaggaggt ggaggccggg cctggagacc agcagggcga ctcctacctc
1800
agggtgtcct ccgacagccc aaaggaccag agcccgcctg agggtcccac agaagatgag
1860
ctgtccctgc ccgagggacc cagcgtcccc agcagctccc taccccagac tccggagcag
1920
gagaagttcc tccgccacca ctttgagaca ctgactgagt ccccctgcag agctctggga
1980
gacgtggagg cctctgaagc tgaagaccac ttcttcaacc cacgcctgag tatctccacg
2040

```
cagttcctct caagcctcca gaaggcatcc aggttcaccc ataccttccc tccccgggca
2100
acccagtgcc ttgtgaagtc tccagaggtc aagctcatgg accgaggcgg aagccagccc
2160
agagcaggta ctggctacgc ctccccagac aggacccact cagtgccatc tgcttccgtt
2220
acagctccct gccttacgag cctggcgtcc tgtgtccctg cttcctccgt gctgcccaca
2280
gacaggaatc tcccaacgcc cacatctgca cccaccccag gcctggctca gggtgtccat
2340
gccccctcca cctgttccta catggaggcc actgccagct cccgtgccag gatatcacgc
2400
agcatctccc tcggtgacag tgagggccct atcgtggcca cactggccca gcccctccgt
2460
aggccatcgt ccgttgggga gctggcctcc ttgggccagg agcttcaggc catcaccacc
2520
gcgacaacac ccagtttgga cagtgagggc caagagcctg ccctgcgttc ctggggcaac
2580
cacgaggccc gggccaacct gagactgacc ctgtcaagtg cctgtgatgg gctcctgcag
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ccccccgtgg atacccagcc tggcgtcacc gtccctgcag tgagcttccc agcccctagc
2700
cctgtggaag agagcgccct gaggctccac ggctctgcct ttcgcccaag tctcccagct
2760
cctgagtccc ctggccttcc tgcccacccc agtaaccccc agcttccaga ggcccggcct
2820
ggcatccctg gcggcactgc ctccctcctg gagcccacct ccgggtgggg aacatcttgc
2880
acaggctgca gaccaccttc caagaagccc tcgaccttta ccgtgtgttg gtctccagtg
2940
gccaggtgga caccgggcag cagcaggcac ggactgagct ggtctccacc ttcctgtgga
3000
tccacagcca gctggaggct gaatgcctgg tggggactag tgtggcccca gcccaggctc
3060
tgcccagccc aggacccccg tccccaccga cgctgtaccc cctggccagc ccagacctgc
3120
aggccctgct ggaacactac tcggagctgc tggtgcaggc cgtgcggagg aaggcacggg
3180
ggcactgagg gcgcagcccc tccaccgcag ccctgctgct tctgaggact taggtatttt
3240
aagcgaataa actgacagct ttgaggaatg gttcctggtg tctgtttggg cctatccaca
3300
aagccctctt caagtggaag tggggaggga gggtagaagg tgatgcccag aggactcgtg
3360
tctgtcagtg gagagcatgg gaccagcgct cccaagaagt tcaggaactg cagccatgac
3420
ctcagggcca gtcctcccac actgcccaca gagctgccac agaccagtgt gaggtgctta
3480
cccagtgggg cccatttgtg ccccagggag gagccagacc ctctt
3525
```

```
<210> 4578
<211> 1007
<212> PRT
```

<213> Homo sapiens

<400> 4578

```
Met Ser His Phe Pro Asp Arg Gly Ser Glu Asn Gly Thr Pro Met Asp
1               5                   10                  15
Val Lys Ala Gly Val Arg Val Met Gln Val Ser Pro Asp Gly Gln His
            20                  25                  30
Leu Ala Ser Gly Asp Arg Ser Gly Asn Leu Arg Gln Val Gly Pro Gly
            35                  40                  45
Ser Val Gln Cys Thr Pro Pro Ser Ser Ser Ser Gly Ser Gln Gly Ser
    50                  55                  60
Gly Gln Lys Pro Trp Pro Trp His Leu Leu Pro Ile Gly Asn Glu
65                  70                  75                  80
Gly Leu Ile His Glu Leu His Phe Met Asp Glu Leu Val Lys Val Glu
                85                  90                  95
Ala His Asp Ala Glu Val Leu Cys Leu Glu Tyr Ser Lys Pro Glu Thr
            100                 105                 110
Gly Leu Thr Leu Leu Ala Ser Ala Ser Arg Asp Arg Leu Ile His Val
            115                 120                 125
Leu Asn Val Glu Lys Asn Tyr Asn Leu Glu Gln Thr Leu Asp Asp His
    130                 135                 140
Ser Ser Ser Ile Thr Ala Ile Lys Phe Ala Gly Asn Arg Asp Ile Gln
145                 150                 155                 160
Met Ile Ser Cys Gly Ala Asp Lys Ser Ile Tyr Phe Arg Ser Ala Gln
            165                 170                 175
Gln Gly Ser Asp Gly Leu His Phe Val Arg Thr His His Val Ala Glu
            180                 185                 190
Lys Thr Thr Leu Tyr Asp Met Asp Ile Asp Ile Thr Gln Lys Tyr Val
            195                 200                 205
Ala Val Ala Cys Gln Asp Arg Asn Val Arg Val Tyr Asn Thr Val Asn
    210                 215                 220
Gly Lys Gln Lys Lys Cys Tyr Lys Gly Ser Gln Gly Asp Glu Gly Ser
225                 230                 235                 240
Leu Leu Lys Val His Val Asp Pro Ser Gly Thr Phe Leu Ala Thr Ser
            245                 250                 255
Cys Ser Asp Lys Ser Ile Ser Val Ile Asp Phe Tyr Ser Gly Glu Cys
            260                 265                 270
Ile Ala Lys Met Phe Gly His Ser Gly Gly Cys Ala Ser Leu Leu Gly
            275                 280                 285
Met Pro Pro His Pro Pro Thr Pro Ser Asp Ser Glu Gly Lys Cys Ser
    290                 295                 300
Leu Ser Ala Leu Phe Ala Glu Ile Ile Thr Ser Met Lys Phe Thr Tyr
305                 310                 315                 320
Asp Cys His His Leu Ile Thr Val Ser Gly Asp Ser Cys Val Phe Ile
            325                 330                 335
Trp His Leu Gly Pro Glu Ile Thr Asn Cys Met Lys Gln His Leu Leu
            340                 345                 350
Glu Ile Asp His Arg Gln Gln Gln His Thr Asn Asp Lys Lys Arg
    355                 360                 365
Ser Gly His Pro Arg Ser Trp Gln Pro Leu Pro Val His Gln Arg Asp
    370                 375                 380
Glu Ser Leu Pro Gly Pro His Gly Val Met Leu Gly Thr Gln Ser Ser
385                 390                 395                 400
Leu Pro Ala Asn Gln Arg Gln Ala Ala Thr Val Gly Lys Ala Ala Gly
```

```
                    405                      410                      415
Asp Asp Asp Val Ala Asp Gly Leu Ala Phe His Ala Lys Arg Ser Tyr
        420                      425                      430
Gln Pro His Gly Arg Trp Ala Glu Arg Ala Gly Gln Glu Pro Leu Lys
        435                      440                      445
Thr Ile Leu Asp Ala Gln Asp Leu Asp Cys Tyr Phe Thr Pro Met Lys
        450                      455                      460
Pro Glu Ser Leu Glu Asn Ser Ile Leu Asp Ser Leu Glu Pro Gln Ser
465                      470                      475                      480
Leu Ala Ser Leu Leu Ser Glu Gln Lys Glu Ser Ser Glu Ala Ser Glu
                485                      490                      495
Leu Ile Leu Tyr Ser Leu Glu Ala Glu Val Thr Val Thr Gly Thr Asp
            500                      505                      510
Ser Gln Tyr Cys Arg Lys Glu Val Glu Ala Gly Pro Gly Asp Gln Gln
            515                      520                      525
Gly Asp Ser Tyr Leu Arg Val Ser Ser Asp Ser Pro Lys Asp Gln Ser
        530                      535                      540
Pro Pro Glu Gly Pro Thr Glu Asp Glu Leu Ser Leu Pro Glu Gly Pro
545                      550                      555                      560
Ser Val Pro Ser Ser Ser Leu Pro Gln Thr Pro Glu Gln Glu Lys Phe
                565                      570                      575
Leu Arg His His Phe Glu Thr Leu Thr Glu Ser Pro Cys Arg Ala Leu
            580                      585                      590
Gly Asp Val Glu Ala Ser Glu Ala Glu Asp His Phe Phe Asn Pro Arg
            595                      600                      605
Leu Ser Ile Ser Thr Gln Phe Leu Ser Ser Leu Gln Lys Ala Ser Arg
        610                      615                      620
Phe Thr His Thr Phe Pro Pro Arg Ala Thr Gln Cys Leu Val Lys Ser
625                      630                      635                      640
Pro Glu Val Lys Leu Met Asp Arg Gly Gly Ser Gln Pro Arg Ala Gly
            645                      650                      655
Thr Gly Tyr Ala Ser Pro Asp Arg Thr His Ser Val Pro Ser Ala Ser
            660                      665                      670
Val Thr Ala Pro Cys Leu Thr Ser Leu Ala Ser Cys Val Pro Ala Ser
            675                      680                      685
Ser Val Leu Pro Thr Asp Arg Asn Leu Pro Thr Pro Thr Ser Ala Pro
        690                      695                      700
Thr Pro Gly Leu Ala Gln Gly Val His Ala Pro Ser Thr Cys Ser Tyr
705                      710                      715                      720
Met Glu Ala Thr Ala Ser Ser Arg Ala Arg Ile Ser Arg Ser Ile Ser
            725                      730                      735
Leu Gly Asp Ser Glu Gly Pro Ile Val Ala Thr Leu Ala Gln Pro Leu
        740                      745                      750
Arg Arg Pro Ser Ser Val Gly Glu Leu Ala Ser Leu Gly Gln Glu Leu
        755                      760                      765
Gln Ala Ile Thr Thr Ala Thr Thr Pro Ser Leu Asp Ser Glu Gly Gln
    770                      775                      780
Glu Pro Ala Leu Arg Ser Trp Gly Asn His Glu Ala Arg Ala Asn Leu
785                      790                      795                      800
Arg Leu Thr Leu Ser Ser Ala Cys Asp Gly Leu Leu Gln Pro Pro Val
                805                      810                      815
Asp Thr Gln Pro Gly Val Thr Val Pro Ala Val Ser Phe Pro Ala Pro
        820                      825                      830
Ser Pro Val Glu Glu Ser Ala Leu Arg Leu His Gly Ser Ala Phe Arg
```

```
            835                    840                    845
Pro Ser Leu Pro Ala Pro Glu Ser Pro Gly Leu Pro Ala His Pro Ser
        850                    855                    860
Asn Pro Gln Leu Pro Glu Ala Arg Pro Gly Ile Pro Gly Gly Thr Ala
865                    870                    875                    880
Ser Leu Leu Glu Pro Thr Ser Gly Trp Gly Thr Ser Cys Thr Gly Cys
                885                    890                    895
Arg Pro Pro Ser Lys Lys Pro Ser Thr Phe Thr Val Cys Trp Ser Pro
            900                    905                    910
Val Ala Arg Trp Thr Pro Gly Ser Ser Arg His Gly Leu Ser Trp Ser
        915                    920                    925
Pro Pro Ser Cys Gly Ser Thr Ala Ser Trp Arg Leu Asn Ala Trp Trp
        930                    935                    940
Gly Leu Val Trp Pro Gln Pro Arg Leu Cys Pro Ala Gln Asp Pro Arg
945                    950                    955                    960
Pro His Arg Arg Cys Thr Pro Trp Pro Ala Gln Thr Cys Arg Pro Cys
                965                    970                    975
Trp Asn Thr Thr Arg Ser Cys Trp Cys Arg Pro Cys Gly Gly Arg His
                980                    985                    990
Gly Gly Thr Glu Gly Ala Ala Pro Pro Pro Gln Pro Cys Cys Phe
            995                    1000                   1005
```

<210> 4579
<211> 321
<212> DNA
<213> Homo sapiens

<400> 4579
nncaagatgt ttggccattc agaaattatt accagcatga agttcaccta tgactgtcat
60
cacttgatca cagtatctgg agacagctgc gtgttcatct ggcacctggg cccggagatc
120
accaactgca tgaagcagca cttgctggag attgaccacc ggcagcagca gcagcacaca
180
aatgacaaga agcggagtgg ccccccccagg caggatacgt atgtgtccac acctagtgag
240
attcactccc tgagccctgg agagcaaaca gaggatgatc tggaggaaga gtgtgagcca
300
gaagagatgc tgaagacacc n
321

<210> 4580
<211> 107
<212> PRT
<213> Homo sapiens

<400> 4580
```
Xaa Lys Met Phe Gly His Ser Glu Ile Ile Thr Ser Met Lys Phe Thr
1               5                   10                  15
Tyr Asp Cys His His Leu Ile Thr Val Ser Gly Asp Ser Cys Val Phe
            20                  25                  30
Ile Trp His Leu Gly Pro Glu Ile Thr Asn Cys Met Lys Gln His Leu
        35                  40                  45
Leu Glu Ile Asp His Arg Gln Gln Gln Gln His Thr Asn Asp Lys Lys
```

```
          50                  55                  60
     Arg Ser Gly Pro Pro Arg Gln Asp Thr Tyr Val Ser Thr Pro Ser Glu
     65                  70                  75                  80
     Ile His Ser Leu Ser Pro Gly Glu Gln Thr Glu Asp Asp Leu Glu Glu
                     85                  90                  95
     Glu Cys Glu Pro Glu Glu Met Leu Lys Thr Pro
                     100                 105
```

```
<210> 4581
<211> 1396
<212> DNA
<213> Homo sapiens

<400> 4581
nngtcgccgg ggcgaaggcg gcagagtcag agcgggagcc gaagtcggag caggagccat
60
gggcggcgaa accgacggcg ccgggaggac gagggacggc gcagacggag gcggcggagc
120
cgggagcgca ggtcagattc agaggaagag cggtggcagc gctcagggat gcgaagccgg
180
agccccccgc ggcccaagtg gcactcaaga gatgggtcct ctcagtcgga ctcaggagag
240
gagcagtcac ggggccagtg ggctcgccgg cgacggcgcg cacgctcgtg gtctcctagc
300
tcctcagcat ccagctcggc gtctccaggg cgatcccaga gccccngggc ggccgcggct
360
gccctgagcc agcagcagag cctgcaggag cggctgcggc tgcgggagga gcggaagcag
420
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480
aagaaggagg ccaaggagcg caagaagcgg gagaagatgg gctggggtga ggagtacatg
540
ggctacacca acaccgacaa ccccttcgga gacaacaacc tgctgggcac cttcatctgg
600
aataaggccc tggagaagaa ggggatcagc cacctggagg agaaggagct gaaggagcgg
660
aacaagagga tccaggagga caaccggctg gagctgcaga aggtgaagca gctgcggctg
720
gagcgggagc gggagaaggc catgcgcgag caggagctgg agatgctgca gcgcgtgaag
780
gggacagagc acttcaagac atgggaggag caggaggaca acttccacct ccagcaggcc
840
aagctgcgtt ccaagatccg catccgggac gggcgggcca agcccatcga cctgctggcc
900
aagtacatca gcgctgagga tgacgatctg gccggggaga tgcatgagcc ctacacgttc
960
ctcaacggcc tcaccgtggc cgacatggag gacctgctgg aggatatcca ggtctacatg
1020
gagctggagc agggcaagaa cgccgacttc tggcgggaca tgaccaccat caccgaggac
1080
gagatctcca agctccgcaa gctggaggcc tcgggcaagg gccaggtga gcgccgcgag
1140
ggggtcaacg cctccgtcag ctctgatgtg cagtcggtgt tcaaggggaa gacatacaac
1200
```

```
cagctgcagg tcatcttcca gggcatcgag ggcaaaatcc gcgctggtgg ccccaacctg
1260
gacatgggct actgggagag cctcctgcag cagcttcgtg cccacatggc gcgggcccgg
1320
ctgcgtgagc gccaccagga cgtgctgcgg cagaagctgt acaaactgaa gcaggagcag
·1380
ggcgtggaga gctagc
1396


<210> 4582
<211> 354
<212> PRT
<213> Homo sapiens

<400> 4582
Arg Ser Gln Ser Pro Arg Ala Ala Ala Ala Ala Leu Ser Gln Gln Gln
 1               5                  10                  15
Ser Leu Gln Glu Arg Leu Arg Leu Arg Glu Glu Arg Lys Gln Gln Glu
             20                  25                  30
Glu Leu Met Lys Ala Phe Glu Thr Pro Glu Glu Lys Arg Ala Arg Arg
             35                  40                  45
Leu Ala Lys Lys Glu Ala Lys Glu Arg Lys Lys Arg Glu Lys Met Gly
         50                  55                  60
Trp Gly Glu Glu Tyr Met Gly Tyr Thr Asn Thr Asp Asn Pro Phe Gly
65                  70                  75                  80
Asp Asn Asn Leu Leu Gly Thr Phe Ile Trp Asn Lys Ala Leu Glu Lys
                 85                  90                  95
Lys Gly Ile Ser His Leu Glu Glu Lys Glu Leu Lys Glu Arg Asn Lys
             100                 105                 110
Arg Ile Gln Glu Asp Asn Arg Leu Glu Leu Gln Lys Val Lys Gln Leu
         115                 120                 125
Arg Leu Glu Arg Glu Arg Glu Lys Ala Met Arg Glu Gln Glu Leu Glu
     130                 135                 140
Met Leu Gln Arg Val Lys Gly Thr Glu His Phe Lys Thr Trp Glu Glu
145                 150                 155                 160
Gln Glu Asp Asn Phe His Leu Gln Gln Ala Lys Leu Arg Ser Lys Ile
                 165                 170                 175
Arg Ile Arg Asp Gly Arg Ala Lys Pro Ile Asp Leu Leu Ala Lys Tyr
             180                 185                 190
Ile Ser Ala Glu Asp Asp Asp Leu Ala Gly Glu Met His Glu Pro Tyr
         195                 200                 205
Thr Phe Leu Asn Gly Leu Thr Val Ala Asp Met Glu Asp Leu Leu Glu
     210                 215                 220
Asp Ile Gln Val Tyr Met Glu Leu Glu Gln Gly Lys Asn Ala Asp Phe
225                 230                 235                 240
Trp Arg Asp Met Thr Thr Ile Thr Glu Asp Glu Ile Ser Lys Leu Arg
                 245                 250                 255
Lys Leu Glu Ala Ser Gly Lys Gly Pro Gly Glu Arg Arg Glu Gly Val
             260                 265                 270
Asn Ala Ser Val Ser Ser Asp Val Gln Ser Val Phe Lys Gly Lys Thr
         275                 280                 285
Tyr Asn Gln Leu Gln Val Ile Phe Gln Gly Ile Glu Gly Lys Ile Arg
     290                 295                 300
Ala Gly Gly Pro Asn Leu Asp Met Gly Tyr Trp Glu Ser Leu Leu Gln
```

```
305                    310                    315                    320
Gln Leu Arg Ala His Met Ala Arg Ala Arg Leu Arg Glu Arg His Gln
                    325                    330                    335
Asp Val Leu Arg Gln Lys Leu Tyr Lys Leu Lys Gln Glu Gln Gly Val
            340                    345                    350
Glu Ser


<210> 4583
<211> 3350
<212> DNA
<213> Homo sapiens


<400> 4583
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120
agatgacgcc agtcagggag cggccgtggc ccagacagtg aggaagcgcg aaggcggagc
180
aaccgaggaa tcctccggag aagaatcaga gccgtcgcta ccgccactac cgccaccacc
240
atggaaggag caaagccgac attgcagctc gtgtaccagg cagtgcaggc gctttaccac
300
gacccagatc ccagcggaaa ggagcgcgcc tcttttggc ttggggagct gcagcgttcg
360
gttcatgcat gggagatctc agaccagttg ttacagatcc ggcaggatgt ggagtcatgc
420
tattttgctg cacagaccat gaaaatgaag attcagacct catttttatga gctccccaca
480
gactctcatg cctctttacg ggactcattg ctaacccata tccagaactt gaaagacttg
540
tcacctgtta ttgtaacgca gctggcttta gcaatagcag atcttgccct acagatgcct
600
tcctggaagg gatgtgtgca aacactggtg gaaaaataca gcaatgatgt gacttctttg
660
ccttttttgc tggagatcct tacagtgtta cctgaagaag tacatagtcg ttccttacga
720
attggagcta atcggcgcac agaaattata gaagatttgg ccttctactc tagtacagta
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840
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960
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1020
actaacttgc cattagccat gcaacttttt cagggagtgc tgacattgga gactgcctat
1080
catatggccg tggcacgtga agatttagac aaagttctga attactgccg tattttcact
1140
gaactatgtg aaacttttct tgaaaaaatt gtttgtactc caggccaagg tcttggggac
1200
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cttcgaactc tggagctgct gcttatctgt gcaggccatc ctcaatatga ggtagtagaa
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1380
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1560
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1620
gaagtcctag aaggagttgt ccgcctcccg gagaccgtac atacggctgt gcgatacacc
1680
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1740
cctgtgttgg gctatttgat gaaaggcctg tgtgaaaagc ccctggcttc tgctgcagcc
1800
aaagccattc ataacatttg ctctgtctgc cgagatcaca tggctcagca ctttaatgga
1860
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1920
ttgctaaaag ggacagcact tgtcctagcc cgattacctt tggataagat taccgaatgt
1980
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2040
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2100
cataccaatc ccattgtgga aaatggacag actcatccgt gtcagaaagt catacaggaa
2160
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2220
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2280
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2340
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2400
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2460
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2520
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2580
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2640
gacctcattc atacaggggt agccaatgat catgaagaag actttgaatt acggaaagaa
2700
ctgattggac aggtgatgaa ccagcttgga cagcagcttg tcagccagct gctgcacacc
2760
tgctgctttt gcctccccc ctatacccta ccagatgtgg ctgaagtgct ctgggagatc
2820
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atgcaggttg acagaccgac tttttgtcga tggttagaaa attccttaaa aggtttgcca
2880
aaggaaacaa ccgtgggagc cgtcacagtg acacacaaac aacttacaga cttccacaag
2940
caagtcacta gtgctgagga atgtaaacaa gtttgctggg ccttgcgaga cttcaccagg
3000
ttgtttcgat agctcacact cctgcactgt gcctgtcacc caggaatgtc ttttttaatt
3060
agaagacagg aagaaaacaa aaaccagact gtgtcccaca atcagaaacc tccgttgtgg
3120
cagaggggcc ttcaccgcca ccagggtgtc ccgccagaca gggagagact ccagccttct
3180
gaggccatcc tgaggagttc ctgtttgggg gtgtgaggga aaatcagcgc ggattttaaa
3240
aagatggctg tggcctgccc ggcgtggtgg gaggggagct ggtttcctgg tgaactttct
3300
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3350
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<210> 4584
<211> 923
<212> PRT
<213> Homo sapiens

<400> 4584
Met Glu Gly Ala Lys Pro Thr Leu Gln Leu Val Tyr Gln Ala Val Gln
1               5                   10                  15
Ala Leu Tyr His Asp Pro Asp Pro Ser Gly Lys Glu Arg Ala Ser Phe
            20                  25                  30
Trp Leu Gly Glu Leu Gln Arg Ser Val His Ala Trp Glu Ile Ser Asp
        35                  40                  45
Gln Leu Leu Gln Ile Arg Gln Asp Val Glu Ser Cys Tyr Phe Ala Ala
    50                  55                  60
Gln Thr Met Lys Met Lys Ile Gln Thr Ser Phe Tyr Glu Leu Pro Thr
65                  70                  75                  80
Asp Ser His Ala Ser Leu Arg Asp Ser Leu Leu Thr His Ile Gln Asn
            85                  90                  95
Leu Lys Asp Leu Ser Pro Val Ile Val Thr Gln Leu Ala Leu Ala Ile
            100                 105                 110
Ala Asp Leu Ala Leu Gln Met Pro Ser Trp Lys Gly Cys Val Gln Thr
        115                 120                 125
Leu Val Glu Lys Tyr Ser Asn Asp Val Thr Ser Leu Pro Phe Leu Leu
    130                 135                 140
Glu Ile Leu Thr Val Leu Pro Glu Glu Val His Ser Arg Ser Leu Arg
145                 150                 155                 160
Ile Gly Ala Asn Arg Arg Thr Glu Ile Ile Glu Asp Leu Ala Phe Tyr
            165                 170                 175
Ser Ser Thr Val Val Ser Leu Leu Met Thr Cys Val Glu Lys Ala Gly
            180                 185                 190
Thr Asp Glu Lys Met Leu Met Lys Val Phe Arg Cys Leu Gly Ser Trp
        195                 200                 205
Phe Asn Leu Gly Val Leu Asp Ser Asn Phe Met Ala Asn Asn Lys Leu
    210                 215                 220
Leu Ala Leu Leu Phe Glu Val Leu Gln Gln Asp Lys Thr Ser Ser Asn
```

```
225                    230                    235                    240
Leu His Glu Ala Ala Ser Asp Cys Val Cys Ser Ala Leu Tyr Ala Ile
                245                    250                    255
Glu Asn Val Glu Thr Asn Leu Pro Leu Ala Met Gln Leu Phe Gln Gly
            260                    265                    270
Val Leu Thr Leu Glu Thr Ala Tyr His Met Ala Val Ala Arg Glu Asp
        275                    280                    285
Leu Asp Lys Val Leu Asn Tyr Cys Arg Ile Phe Thr Glu Leu Cys Glu
    290                    295                    300
Thr Phe Leu Glu Lys Ile Val Cys Thr Pro Gly Gln Gly Leu Gly Asp
305                    310                    315                    320
Leu Arg Thr Leu Glu Leu Leu Leu Ile Cys Ala Gly His Pro Gln Tyr
                325                    330                    335
Glu Val Val Glu Ile Ser Phe Asn Phe Trp Tyr Arg Leu Gly Glu His
                340                    345                    350
Leu Tyr Lys Thr Asn Asp Glu Val Ile His Gly Ile Phe Lys Ala Tyr
        355                    360                    365
Ile Gln Arg Leu Leu His Ala Leu Ala Arg His Cys Gln Leu Glu Pro
    370                    375                    380
Asp His Glu Gly Val Pro Glu Glu Thr Asp Asp Phe Gly Glu Phe Arg
385                    390                    395                    400
Met Arg Val Ser Asp Leu Val Lys Asp Leu Ile Phe Leu Ile Gly Ser
                405                    410                    415
Met Glu Cys Phe Ala Gln Leu Tyr Ser Thr Leu Lys Glu Gly Asn Pro
        420                    425                    430
Pro Trp Glu Val Thr Glu Ala Val Leu Phe Ile Met Ala Ala Ile Ala
        435                    440                    445
Lys Ser Val Asp Pro Glu Asn Asn Pro Thr Leu Val Glu Val Leu Glu
    450                    455                    460
Gly Val Val Arg Leu Pro Glu Thr Val His Thr Ala Val Arg Tyr Thr
465                    470                    475                    480
Ser Ile Glu Leu Val Gly Glu Met Ser Glu Val Val Asp Arg Asn Pro
                485                    490                    495
Gln Phe Leu Asp Pro Val Leu Gly Tyr Leu Met Lys Gly Leu Cys Glu
            500                    505                    510
Lys Pro Leu Ala Ser Ala Ala Ala Lys Ala Ile His Asn Ile Cys Ser
        515                    520                    525
Val Cys Arg Asp His Met Ala Gln His Phe Asn Gly Leu Leu Glu Ile
    530                    535                    540
Ala Arg Ser Leu Asp Ser Phe Leu Leu Ser Pro Glu Ala Ala Val Gly
545                    550                    555                    560
Leu Leu Lys Gly Thr Ala Leu Val Leu Ala Arg Leu Pro Leu Asp Lys
                565                    570                    575
Ile Thr Glu Cys Leu Ser Glu Leu Cys Ser Val Gln Val Met Ala Leu
            580                    585                    590
Lys Lys Leu Leu Ser Gln Glu Pro Ser Asn Gly Ile Ser Ser Asp Pro
        595                    600                    605
Thr Val Phe Leu Asp Arg Leu Ala Val Ile Phe Arg His Thr Asn Pro
    610                    615                    620
Ile Val Glu Asn Gly Gln Thr His Pro Cys Gln Lys Val Ile Gln Glu
625                    630                    635                    640
Ile Trp Pro Val Leu Ser Glu Thr Leu Asn Lys His Arg Ala Asp Asn
                645                    650                    655
Arg Ile Val Glu Arg Cys Cys Arg Cys Leu Arg Phe Ala Val Arg Cys
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3782

```
            660                    665                    670
Val Gly Lys Gly Ser Ala Ala Leu Leu Gln Pro Leu Val Thr Gln Met
            675                    680                    685
Val Asn Val Tyr His Val His Gln His Ser Cys Phe Leu Tyr Leu Gly
            690                    695                    700
Ser Ile Leu Val Asp Glu Tyr Gly Met Glu Glu Gly Cys Arg Gln Gly
705                    710                    715                    720
Leu Leu Asp Met Leu Gln Ala Leu Cys Ile Pro Thr Phe Gln Leu Leu
            725                    730                    735
Glu Gln Gln Asn Gly Leu Gln Asn His Pro Asp Thr Val Asp Asp Leu
            740                    745                    750
Phe Arg Leu Ala Thr Arg Phe Ile Gln Arg Ser Pro Val Thr Leu Leu
            755                    760                    765
Arg Ser Gln Val Val Ile Pro Ile Leu Gln Trp Ala Ile Ala Ser Thr
            770                    775                    780
Thr Leu Asp His Arg Asp Ala Asn Cys Ser Val Met Arg Phe Leu Arg
785                    790                    795                    800
Asp Leu Ile His Thr Gly Val Ala Asn Asp His Glu Glu Asp Phe Glu
            805                    810                    815
Leu Arg Lys Glu Leu Ile Gly Gln Val Met Asn Gln Leu Gly Gln Gln
            820                    825                    830
Leu Val Ser Gln Leu Leu His Thr Cys Cys Phe Cys Leu Pro Pro Tyr
            835                    840                    845
Thr Leu Pro Asp Val Ala Glu Val Leu Trp Glu Ile Met Gln Val Asp
            850                    855                    860
Arg Pro Thr Phe Cys Arg Trp Leu Glu Asn Ser Leu Lys Gly Leu Pro
865                    870                    875                    880
Lys Glu Thr Thr Val Gly Ala Val Thr Val Thr His Lys Gln Leu Thr
            885                    890                    895
Asp Phe His Lys Gln Val Thr Ser Ala Glu Glu Cys Lys Gln Val Cys
            900                    905                    910
Trp Ala Leu Arg Asp Phe Thr Arg Leu Phe Arg
            915                    920
```

<210> 4585
<211> 1952
<212> DNA
<213> Homo sapiens

<400> 4585
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120
gaacggatgg agggaagcag ctcctacgaa gttccctctg tggctgctgc tgatctggag
180
gagggtgctg gtcagactag gagcttgcct gccaccccct ccaaagatgt tcacaagggt
240
gttggaggca tcatcttttc ctcctcaccg attttagact tgagtgaaag tggtctgtgc
300
cgtttggagg aggtctttag aatccccagc cttcaacaat tgcatctgca aaggaatgcc
360
ctgtgtgtga ttcctcaaga tttctttcag ttgcttccga acctgacttg gctggacctc
420
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cggtacaata gaattaaagc gcttccttct gggattggag ctcaccagca tttgaaaact
480
ttgcttttag aaagaaatcc tatcaaaatg ttacctgtgg agctggggag cgtaaccacg
540
ctgaaagcac tgaacctaag acactgccct ctggaattcc ctcctcagct cgttgtgcag
600
aagggattgg tggctatcca gcgcttcctg cggatgtggg cagtagaaca ctctctcccc
660
agaaatccaa cttctcaaga ggctccaccg gttagagaga tgaccctccg tgacctcccg
720
agcccaggac tggagttgtc tggagaccac gcgtctaacc aaggagctgt gaacgctcag
780
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840
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900
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960
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1020
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1080
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1200
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1560
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1620
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1680
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1740
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1800
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1952

<210> 4586

<211> 530
<212> PRT
<213> Homo sapiens

<400> 4586
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Met Glu Gly Ser Ser Ser Tyr Glu Val Pro Ser Val Ala Ala Ala Asp
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Leu Glu Glu Gly Ala Gly Gln Thr Arg Ser Leu Pro Ala Thr Pro Ser
            20                  25                  30
Lys Asp Val His Lys Gly Val Gly Gly Ile Ile Phe Ser Ser Ser Pro
            35                  40                  45
Ile Leu Asp Leu Ser Glu Ser Gly Leu Cys Arg Leu Glu Glu Val Phe
        50                  55                  60
Arg Ile Pro Ser Leu Gln Gln Leu His Leu Gln Arg Asn Ala Leu Cys
65                  70                  75                  80
Val Ile Pro Gln Asp Phe Phe Gln Leu Leu Pro Asn Leu Thr Trp Leu
                85                  90                  95
Asp Leu Arg Tyr Asn Arg Ile Lys Ala Leu Pro Ser Gly Ile Gly Ala
            100                 105                 110
His Gln His Leu Lys Thr Leu Leu Leu Glu Arg Asn Pro Ile Lys Met
           115                  120                 125
Leu Pro Val Glu Leu Gly Ser Val Thr Thr Leu Lys Ala Leu Asn Leu
        130                 135                 140
Arg His Cys Pro Leu Glu Phe Pro Pro Gln Leu Val Val Gln Lys Gly
145                 150                 155                 160
Leu Val Ala Ile Gln Arg Phe Leu Arg Met Trp Ala Val Glu His Ser
                165                 170                 175
Leu Pro Arg Asn Pro Thr Ser Gln Glu Ala Pro Pro Val Arg Glu Met
            180                 185                 190
Thr Leu Arg Asp Leu Pro Ser Pro Gly Leu Glu Leu Ser Gly Asp His
           195                  200                 205
Ala Ser Asn Gln Gly Ala Val Asn Ala Gln Asp Pro Glu Gly Ala Val
        210                 215                 220
Met Lys Glu Lys Ala Ser Phe Leu Pro Pro Val Glu Lys Pro Asp Leu
225                 230                 235                 240
Ser Glu Leu Arg Lys Ser Ala Asp Ser Ser Glu Asn Trp Pro Ser Glu
                245                 250                 255
Glu Glu Ile Arg Arg Phe Trp Lys Leu Arg Gln Glu Ile Val Glu His
            260                 265                 270
Val Lys Ala Asp Val Leu Gly Asp Gln Leu Leu Thr Arg Glu Leu Pro
        275                 280                 285
Pro Asn Leu Lys Ala Ala Leu Asn Ile Glu Lys Glu Leu Pro Lys Pro
        290                 295                 300
Arg His Val Phe Arg Arg Lys Thr Ala Ser Ser Arg Ser Ile Leu Pro
305                 310                 315                 320
Asp Leu Leu Ser Pro Tyr Gln Met Ala Ile Arg Ala Lys Arg Leu Glu
                325                 330                 335
Glu Ser Arg Ala Ala Ala Leu Arg Glu Leu Gln Glu Lys Gln Ala Leu
            340                 345                 350
Met Glu Gln Gln Arg Arg Glu Lys Arg Ala Leu Gln Glu Trp Arg Glu
           355                  360                 365
Arg Ala Gln Arg Met Arg Lys Arg Lys Glu Glu Leu Ser Lys Leu Leu
        370                 375                 380
Pro Pro Arg Arg Ser Met Val Ala Ser Lys Ile Pro Ser Ala Thr Asp
```

```
385                    390                    395                    400
Leu Ile Asp Asn Arg Lys Val Pro Leu Asn Pro Pro Gly Lys Met Lys
              405                    410                    415
Pro Ser Lys Glu Lys Ser Pro Gln Ala Ser Lys Glu Met Ser Ala Leu
              420                    425                    430
Gln Glu Arg Asn Leu Glu Glu Lys Ile Lys Gln His Val Leu Gln Met
              435                    440                    445
Arg Glu Gln Arg Arg Phe His Gly Gln Ala Pro Leu Glu Glu Met Arg
          450                    455                    460
Lys Ala Ala Glu Asp Leu Glu Ile Ala Thr Glu Leu Gln Asp Glu Val
465                    470                    475                    480
Leu Lys Leu Lys Leu Gly Leu Thr Leu Asn Lys Asp Arg Arg Arg Ala
              485                    490                    495
Ala Leu Thr Gly Asn Leu Ser Leu Gly Leu Pro Ala Ala Gln Pro Gln
              500                    505                    510
Asn Thr Phe Phe Asn Thr Lys Tyr Gly Glu Ser Gly Asn Val Arg Arg
          515                    520                    525
Tyr Gln
    530
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<210> 4587
<211> 1723
<212> DNA
<213> Homo sapiens

<400> 4587
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120
acggtcgatg gcacttggaa gaccccttcc ttcccaaaaa agaagacagc tgcttccagc
180
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240
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360
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420
aataaatgct ccggagcatc ccagaagttg ccacggaaga tggtggcaat tgactgtgag
480
atggtgggca caggaccaaa ggggcatgtt agttccttgg ctcgatgtag cattgtcaac
540
tacaacggag atgtgcttta tgacgagtac attcttcccc cctgccacat tgtggactac
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660
gctcgaggcc agatcttgaa gatactcaca gggaagatag tggtgggggca tgccatccac
720
aacgacttca aagcccttca gtactttcac cccaagtccc tcacccgtga cacctcccat
780
atcccccccc tcaaccggaa ggctgactgc ccggagaatg ccaccatgtc tctgaagcat
840
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ctcaccaaga agctgctaaa ccgggatatc caggttggga agagcggaca ttcctctgtg
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960
ctagcccgga atcccctac agactagtgg cagtggggac gctggtgata tgaggaggca
1020
gaggcagcac ccaggagaaa cagggcagtg gaccaatgga cagctccacc agctccacat
1080
ctttggaagc tagatttggg gagagagaag ctctaccca gacttaatac ccattgaaat
1140
ttcacctcag gtgttgtgtc ctgtgtctgg ttaagtgtcc catggaaggg gaaagccttc
1200
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1380
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1440
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1500
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1560
aaatgtgtgg ggtgtggtgg caggagcctg taatcctagc tactcaggag gctgaggcag
1620
gagaatcgct tgagcccagg aggcggagat tgcagtgagc cgagatcgtg tcactgcact
1680
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1723
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```
<210> 4588
<211> 328
<212> PRT
<213> Homo sapiens
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<400> 4588
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Ser Lys Lys Asn Gln Pro Pro Ser Lys Ala Pro Lys Leu His Ser Glu
                20                  25                  30
Pro Ser Lys Lys Gly Glu Thr Pro Thr Val Asp Gly Thr Trp Lys Thr
            35                  40                  45
Pro Ser Phe Pro Lys Lys Lys Thr Ala Ala Ser Ser Asn Gly Ser Gly
        50                  55                  60
Gln Pro Leu Asp Lys Lys Ala Ala Val Ser Trp Leu Thr Pro Ala Pro
65                  70                  75                  80
Ser Lys Lys Ala Asp Ser Val Ala Ala Lys Val Asp Leu Leu Gly Glu
                85                  90                  95
Phe Gln Ser Ala Leu Pro Lys Ile Asn Ser His Pro Thr Arg Ser Gln
            100                 105                 110
Lys Lys Ser Ser Gln Lys Lys Ser Ser Lys Lys Asn His Pro Gln Lys
        115                 120                 125
Asn Ala Pro Gln Asn Ser Thr Gln Ala His Ser Glu Asn Lys Cys Ser
```

```
        130                  135                  140
Gly Ala Ser Gln Lys Leu Pro Arg Lys Met Val Ala Ile Asp Cys Glu
145                  150                  155                  160
Met Val Gly Thr Gly Pro Lys Gly His Val Ser Ser Leu Ala Arg Cys
                165                  170                  175
Ser Ile Val Asn Tyr Asn Gly Asp Val Leu Tyr Asp Glu Tyr Ile Leu
                180                  185                  190
Pro Pro Cys His Ile Val Asp Tyr Arg Thr Arg Trp Ser Gly Ile Arg
            195                  200                  205
Lys Gln His Met Val Asn Ala Thr Pro Phe Lys Ile Ala Arg Gly Gln
        210                  215                  220
Ile Leu Lys Ile Leu Thr Gly Lys Ile Val Val Gly His Ala Ile His
225                  230                  235                  240
Asn Asp Phe Lys Ala Leu Gln Tyr Phe His Pro Lys Ser Leu Thr Arg
                245                  250                  255
Asp Thr Ser His Ile Pro Pro Leu Asn Arg Lys Ala Asp Cys Pro Glu
            260                  265                  270
Asn Ala Thr Met Ser Leu Lys His Leu Thr Lys Lys Leu Leu Asn Arg
            275                  280                  285
Asp Ile Gln Val Gly Lys Ser Gly His Ser Ser Val Glu Asp Ala Gln
        290                  295                  300
Ala Thr Met Glu Leu Tyr Lys Leu Val Glu Val Glu Trp Glu Glu His
305                  310                  315                  320
Leu Ala Arg Asn Pro Pro Thr Asp
                325
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<210> 4589
<211> 585
<212> DNA
<213> Homo sapiens

<400> 4589
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60
tgtgggttgg ggtggctgag ggagaaggga agcgagggtc gcggcgggac cagacgcccc
120
agtcccggcc cgcccgcgac tactgaaggc gctgccgcct gacctgaacg ggcacttgtg
180
ttccagctcc cctgggacct gtggccgccg cccacagacc atgctcctgg ggcgcctgac
240
ttcccagctg ttgagggccg ttccttgggc aggtaggaag ccccgcggcg ganctgggag
300
gatgcacacc tggttaggag tgcgggtctc agcagctccg ctggggcagg gcggtggcca
360
cacacacact ctttcccctc taagcttccg atgctcacag agggaacctc aggggttcag
420
gccaggaatg aggtgcgggg gatcctcgct gggacgaacc tgctgctccc caacccgacg
480
ggcctgtgtg gtctcgcgag cggtgaccgt ggcgtctggt tttctgcagg cggccgcccg
540
ccttggcccg tctctggagt gctgggcagc cgggtctgcg ggccc
585

<210> 4590
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<211> 121
<212> PRT
<213> Homo sapiens

<400> 4590
Met Leu Leu Gly Arg Leu Thr Ser Gln Leu Leu Arg Ala Val Pro Trp
 1   5   10   15
Ala Gly Arg Lys Pro Arg Gly Gly Xaa Gly Arg Met His Thr Trp Leu
            20   25   30
Gly Val Arg Val Ser Ala Ala Pro Leu Gly Gln Gly Gly Gly His Thr
        35   40   45
His Thr Leu Ser Pro Leu Ser Phe Arg Cys Ser Gln Arg Glu Pro Gln
    50   55   60
Gly Phe Arg Pro Gly Met Arg Cys Gly Gly Ser Ser Leu Gly Arg Thr
65   70   75   80
Cys Cys Ser Pro Thr Arg Arg Ala Cys Val Val Ser Arg Ala Val Thr
            85   90   95
Val Ala Ser Gly Phe Leu Gln Ala Ala Ala Arg Leu Gly Pro Ser Leu
            100   105   110
Glu Cys Trp Ala Ala Gly Ser Ala Gly
            115   120

<210> 4591
<211> 496
<212> DNA
<213> Homo sapiens

<400> 4591
aaatttggcc caccgcctac ttttgtagac gacgttttat gggaacacag acaccccgt
60
ccgtgtactt ccatggcttc tttcacaggt cagctgcaga gctaagtaac tgtgacaggg
120
accacttggc taagaaagcc tccagtattt actcgactgc cctgtgcttt ggactcaaaa
180
gagctcctct ctggccctct ggccacgatc gtctccatga gacacggaag ctacgatgct
240
tggcagacag gcttgtgagc ccacaccctg cctccagccc aggctccagg tacctgcccc
300
agaattccct gcacaagtgg ccccaagctt gtgctggtct gtggggtttt cttccctggg
360
ctgttgtcct gggcatgtgc agtcctcagg ctgatgggca gctatgggaa ggctggtcat
420
gcaggctggg tatccacaca cctgcacacg tggcttctcc tagtgcagta tggagtcagg
480
gatgggccgg gaaggg
496

<210> 4592
<211> 152
<212> PRT
<213> Homo sapiens

<400> 4592
Met Gly Thr Gln Thr Pro Pro Ser Val Tyr Phe His Gly Phe Phe His

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     1                     5                          10                         15
    Arg  Ser  Ala  Ala  Glu  Leu  Ser  Asn  Cys  Asp  Arg  Asp  His  Leu  Ala  Lys
                    20                      25                      30
    Lys  Ala  Ser  Ser  Ile  Tyr  Ser  Thr  Ala  Leu  Cys  Phe  Gly  Leu  Lys  Arg
              35                      40                      45
    Ala  Pro  Leu  Trp  Pro  Ser  Gly  His  Asp  Arg  Leu  His  Glu  Thr  Arg  Lys
         50                      55                      60
    Leu  Arg  Cys  Leu  Ala  Asp  Arg  Leu  Val  Ser  Pro  His  Pro  Ala  Ser  Ser
    65                      70                      75                      80
    Pro  Gly  Ser  Arg  Tyr  Leu  Pro  Gln  Asn  Ser  Leu  His  Lys  Trp  Pro  Gln
                   85                      90                      95
    Ala  Cys  Ala  Gly  Leu  Trp  Gly  Phe  Leu  Pro  Trp  Ala  Val  Val  Leu  Gly
              100                     105                     110
    Met  Cys  Ser  Pro  Gln  Ala  Asp  Gly  Gln  Leu  Trp  Glu  Gly  Trp  Ser  Cys
              115                     120                     125
    Arg  Leu  Gly  Ile  His  Thr  Pro  Ala  His  Val  Ala  Ser  Pro  Ser  Ala  Val
         130                     135                     140
    Trp  Ser  Gln  Gly  Trp  Ala  Gly  Lys
    145                     150
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<210> 4593
<211> 4783
<212> DNA
<213> Homo sapiens

<400> 4593
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ttcttggcat ttgtggagaa agttgaacac agcccttttca gtagttttgc atctcaggca
120
tcaggtagct cctcttctgc taccactgtc acctccaagg tggcacccag ctggcccgag
180
tctcactcct ctgcagattc ggcatcttta gcaagaaga aaccccctctt cattacaact
240
gactcctcca agctagtatc tggtgttctg ggctcagctc ttaccagtgg gggcccaagc
300
ctctctgcca tggggaatgg ccgctccagc tcgcccacca gcagcctcac tcagcccatt
360
gagatgccaa ctctctcctc tagccccaca gaggagaggc caactgtggg gcctgggcag
420
caggacaatc ccctcctcaa aacctttagt aacgtctttg gcaggcactc aggcggcttt
480
ctgtcctccc cggcagattt ttcacaggag aacaaagctc cttttgaagc tgtgaaaagg
540
ttctcactgg atgaacgaag cttggcttgc agacaagact cggactccag caccaacagt
600
gacctgtcag atttgagtga ctctgaggag cagctgcagg ctaagacagg cctgaaggga
660
attccagagc acctgatggg gaagctgggc cccaatgggg agcgcagtgc tgagctgttg
720
ctgggcaaaa gcaaagggaa gcaggccccc aagggccggc ctcggactgc ccccctgaaa
780
gttggccagt cagtgctgaa agatgtaagc aaagtgaaga agctgaagca atctggagag
840
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cccttcctgc aggatgggtc atgcatcaat gtggcacctc atctgcacaa gtgtcgtgaa
900
tgccgcctgg agcggtaccg gaagtttaag gaacaggagc aagatgattc tactgtagcc
960
tgccgtttct ttcacttccg gaggttgatc ttcactcgaa aaggggtgct ccgtgtggag
1020
gggttttaa gcccccagca aagtgaccct gatgccatga acctgtggat tccctcttcc
1080
tccctagcag aagggataga tctagagacc tcaaaataca tcctggccaa tgttggggac
1140
cagttctgcc agctcgtaat gtctgagaag gaggccatga tgatggtgga gccacaccag
1200
aaagtggcat ggaagcgagc tgtgcgtggt gtacgggaga tgtgtgatgt gtgtgaaaca
1260
actctcttca acatccactg ggtttgtcgc aaatgtggat ttggggtctg ccttgactgt
1320
taccggctca ggaaaagccg gccacgcagt gagacagaag agatgggtga tgaagaagtt
1380
ttctcctggt tgaagtgtgc aaagggacag tcccacgaac cagagaatct catgcccaca
1440
caaattattc ctggcacagc tctttacaat attggagaca tggtacatgc tgcccggggc
1500
aagtggggaa ttaaagcaaa ctgcccttgt atcagtcgac agaacaaatc tgtattgaga
1560
cctgccgtca ccaatgggat gtcacagctt cctagcataa accctagtgc ctcttctgga
1620
aacgaaacta ccttctctgg tggaggagga ccggcaccag taacaactcc agagccggac
1680
catgttccca aagccgacag cactgacatc agatctgaag agcctctgaa aacagacagt
1740
tcggcgtcaa atagcaatag tgaactgaaa gccatcaggc ctccttgccc tgacacggcc
1800
ccaccctcct ccgccctgca ctggttggca gatttagcaa ctcagaaggc taaagaagaa
1860
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1920
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1980
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2040
cttcactccg ggccgggaaa acttcctcaa accccccttgg acacaggcat accctttccc
2100
ccggtcttct ctacatcctc agcaggagtg aagagcaagg ccagcctacc caactttctt
2160
gaccacatca ttgcctcagt ggtagaaaat aagaaaacct cagatgcttc aaagcgggcc
2220
tgcaacttga ctgataccca gaaggaagtg aaggagatgg tgatggggtt aaatgtgcta
2280
gatccccata cttctcactc ctggctttgt gatgggaggc ttctgtgtct ccatgacccc
2340
agcaacaaaa acaattggaa gatcttccgg gagtgttgga agcaaggtca gccagtgctg
2400
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2460
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gaatttggag accaggatgt agacttggtg aactgcagga actgtgctat aatttccgat
2520
gtgaaagttc gggatttctg ggatggtttc gagatcatat gcaaacgact acggtcagaa
2580
gatgggcagc caatggtgct caaactcaag gactggcctc ctggggaaga ttttcgagac
2640
atgatgccaa ccaggtttga agatctgatg gagaaccttc ctctgccaga atataccaaa
2700
cgagatggca ggctcaatct ggcctctagg ctacctagct actttgtaag gcctgatctg
2760
ggccccaaga tgtacaacgc ctatgggttg ataacagcag aagatagaag agttggtaca
2820
acaaatcttc acttagatgt gtctgatgct gttaatgtga tggtgtatgt tgggattccc
2880
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2940
gaggtgacga agcagaggat tcatgatgga aaagagaagc caggtgcttt atggcacatc
3000
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3060
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3120
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3180
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3240
tgcataaaag tagcagaaga ctttgtatct ccagaacatg taaagcactg tttccgcctg
3300
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3360
aagaacatca tttaccatgc agtgaaagat gcggttggca ccctcaaggc tcatgaatcc
3420
aaactggcaa ggtcctaggc atggagaaac tccaagctcc tctgtgaagc aggtctttca
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3540
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3600
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3660
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3720
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3780
tgcctagtta agtgggaatg tgtttggaga taggggaaat cacataactg gtacaagtat
3840
ggggtaattg cttaaacatg cctggtggaa gtctgatagc gtctctgcac gtgacctctg
3900
acaaagccca tcccaggaga cggggtgaag ctattcccca cactctcctg tgaacactgg
3960
agtcttgcaa gacccaggga gaacccactg cttttcccag gaggctccag gattaggaaa
4020
tgtgtgtatt tagtgaaaaa tagatttgta gtgaaatagt tactatttca tgaaagtaga
4080
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```
tattttttaga attttttgaaa taccacagtt gttttcctgg attataagga aaggcacatt
4140
acatttagtc ttcctttcga tataaaactc tttgaagaaa tatgatttttt agaaatcagc
4200
tacccattat agcacaaaat cagccaaagc agaatttttta aaaattggct ttttttaggat
4260
tcttttttctc cccctcccat cttagtctta ccttgaggga acagtcatat gagaaggaac
4320
tttgtcacat ctaagctgtg gtgtgttccc catgtgtgtg tacaacactg gtgactccag
4380
gaaccatttt cacctattac cagtgttccc tggggactcc tcttaatgtt tccaaatggg
4440
aaggacagtt gatttccaac atgaggttttt ttgttttttta tccagaaata ttttcagcaa
4500
aactttccaa ctgagtggag tctgattaag gatttatttg aaaatggtgg gattcattgg
4560
cccataggta cattggaaaa tgtatatctc tccagctgta ctgtagtgcc ctgcaggctg
4620
tttatatgtt cacagttact tttttttttttt tttaaataaa agtcatttaa tgtagaatac
4680
ttttaattttc actttctgta ttttaatttt gttgaagggc tgattgggat ttccatgttc
4740
ttattaaaaa tctaacaaat caaaaaaaaa aaaaaaaaaa aaa
4783


<210> 4594
<211> 1145
<212> PRT
<213> Homo sapiens

<400> 4594
Asn His Glu Asn Leu Phe Leu Gln Pro Pro Lys Leu Ser Arg Glu Glu
1               5                   10                  15
Pro Ser Asn Pro Phe Leu Ala Phe Val Glu Lys Val Glu His Ser Pro
            20                  25                  30
Phe Ser Ser Phe Ala Ser Gln Ala Ser Gly Ser Ser Ser Ser Ala Thr
            35                  40                  45
Thr Val Thr Ser Lys Val Ala Pro Ser Trp Pro Glu Ser His Ser Ser
        50                  55                  60
Ala Asp Ser Ala Ser Leu Ala Lys Lys Lys Pro Leu Phe Ile Thr Thr
65                  70                  75                  80
Asp Ser Ser Lys Leu Val Ser Gly Val Leu Gly Ser Ala Leu Thr Ser
                85                  90                  95
Gly Gly Pro Ser Leu Ser Ala Met Gly Asn Gly Arg Ser Ser Ser Pro
            100                 105                 110
Thr Ser Ser Leu Thr Gln Pro Ile Glu Met Pro Thr Leu Ser Ser Ser
            115                 120                 125
Pro Thr Glu Glu Arg Pro Thr Val Gly Pro Gly Gln Gln Asp Asn Pro
        130                 135                 140
Leu Leu Lys Thr Phe Ser Asn Val Phe Gly Arg His Ser Gly Gly Phe
145                 150                 155                 160
Leu Ser Ser Pro Ala Asp Phe Ser Gln Glu Asn Lys Ala Pro Phe Glu
                165                 170                 175
Ala Val Lys Arg Phe Ser Leu Asp Glu Arg Ser Leu Ala Cys Arg Gln
```

```
                      180                      185                      190
Asp Ser Asp Ser Ser Thr Asn Ser Asp Leu Ser Asp Leu Ser Asp Ser
         195                      200                      205
Glu Glu Gln Leu Gln Ala Lys Thr Gly Leu Lys Gly Ile Pro Glu His
    210                      215                      220
Leu Met Gly Lys Leu Gly Pro Asn Gly Glu Arg Ser Ala Glu Leu Leu
225                      230                      235                      240
Leu Gly Lys Ser Lys Gly Lys Gln Ala Pro Lys Gly Arg Pro Arg Thr
                  245                      250                      255
Ala Pro Leu Lys Val Gly Gln Ser Val Leu Lys Asp Val Ser Lys Val
         260                      265                      270
Lys Lys Leu Lys Gln Ser Gly Glu Pro Phe Leu Gln Asp Gly Ser Cys
    275                      280                      285
Ile Asn Val Ala Pro His Leu His Lys Cys Arg Glu Cys Arg Leu Glu
    290                      295                      300
Arg Tyr Arg Lys Phe Lys Glu Gln Glu Gln Asp Asp Ser Thr Val Ala
305                      310                      315                      320
Cys Arg Phe Phe His Phe Arg Arg Leu Ile Phe Thr Arg Lys Gly Val
                  325                      330                      335
Leu Arg Val Glu Gly Phe Leu Ser Pro Gln Gln Ser Asp Pro Asp Ala
         340                      345                      350
Met Asn Leu Trp Ile Pro Ser Ser Ser Leu Ala Glu Gly Ile Asp Leu
         355                      360                      365
Glu Thr Ser Lys Tyr Ile Leu Ala Asn Val Gly Asp Gln Phe Cys Gln
    370                      375                      380
Leu Val Met Ser Glu Lys Glu Ala Met Met Met Val Glu Pro His Gln
385                      390                      395                      400
Lys Val Ala Trp Lys Arg Ala Val Arg Gly Val Arg Glu Met Cys Asp
                  405                      410                      415
Val Cys Glu Thr Thr Leu Phe Asn Ile His Trp Val Cys Arg Lys Cys
                  420                      425                      430
Gly Phe Gly Val Cys Leu Asp Cys Tyr Arg Leu Arg Lys Ser Arg Pro
         435                      440                      445
Arg Ser Glu Thr Glu Glu Met Gly Asp Glu Glu Val Phe Ser Trp Leu
    450                      455                      460
Lys Cys Ala Lys Gly Gln Ser His Glu Pro Glu Asn Leu Met Pro Thr
465                      470                      475                      480
Gln Ile Ile Pro Gly Thr Ala Leu Tyr Asn Ile Gly Asp Met Val His
                  485                      490                      495
Ala Ala Arg Gly Lys Trp Gly Ile Lys Ala Asn Cys Pro Cys Ile Ser
         500                      505                      510
Arg Gln Asn Lys Ser Val Leu Arg Pro Ala Val Thr Asn Gly Met Ser
    515                      520                      525
Gln Leu Pro Ser Ile Asn Pro Ser Ala Ser Ser Gly Asn Glu Thr Thr
    530                      535                      540
Phe Ser Gly Gly Gly Gly Pro Ala Pro Val Thr Thr Pro Glu Pro Asp
545                      550                      555                      560
His Val Pro Lys Ala Asp Ser Thr Asp Ile Arg Ser Glu Glu Pro Leu
                  565                      570                      575
Lys Thr Asp Ser Ser Ala Ser Asn Ser Asn Ser Glu Leu Lys Ala Ile
         580                      585                      590
Arg Pro Pro Cys Pro Asp Thr Ala Pro Pro Ser Ser Ala Leu His Trp
    595                      600                      605
Leu Ala Asp Leu Ala Thr Gln Lys Ala Lys Glu Glu Thr Lys Glu Ala
```

```
     610                    615                    620
Gly Ser Leu Arg Ser Val Leu Asn Lys Glu Ser His Ser Pro Phe Gly
625                    630                    635                    640
Leu Asp Ser Phe Asn Ser Thr Ala Lys Val Ser Pro Leu Thr Pro Lys
                645                    650                    655
Leu Phe Asn Ser Leu Leu Leu Gly Pro Thr Ala Ser Asn Asn Lys Thr
                660                    665                    670
Glu Gly Ser Ser Leu Arg Asp Leu Leu His Ser Gly Pro Gly Lys Leu
                675                    680                    685
Pro Gln Thr Pro Leu Asp Thr Gly Ile Pro Phe Pro Pro Val Phe Ser
                690                    695                    700
Thr Ser Ser Ala Gly Val Lys Ser Lys Ala Ser Leu Pro Asn Phe Leu
705                    710                    715                    720
Asp His Ile Ile Ala Ser Val Val Glu Asn Lys Lys Thr Ser Asp Ala
                725                    730                    735
Ser Lys Arg Ala Cys Asn Leu Thr Asp Thr Gln Lys Glu Val Lys Glu
                740                    745                    750
Met Val Met Gly Leu Asn Val Leu Asp Pro His Thr Ser His Ser Trp
                755                    760                    765
Leu Cys Asp Gly Arg Leu Leu Cys Leu His Asp Pro Ser Asn Lys Asn
                770                    775                    780
Asn Trp Lys Ile Phe Arg Glu Cys Trp Lys Gln Gly Gln Pro Val Leu
785                    790                    795                    800
Val Ser Gly Val His Lys Lys Leu Lys Ser Glu Leu Trp Lys Pro Glu
                805                    810                    815
Ala Phe Ser Gln Glu Phe Gly Asp Gln Asp Val Asp Leu Val Asn Cys
                820                    825                    830
Arg Asn Cys Ala Ile Ile Ser Asp Val Lys Val Arg Asp Phe Trp Asp
                835                    840                    845
Gly Phe Glu Ile Ile Cys Lys Arg Leu Arg Ser Glu Asp Gly Gln Pro
                850                    855                    860
Met Val Leu Lys Leu Lys Asp Trp Pro Pro Gly Glu Asp Phe Arg Asp
865                    870                    875                    880
Met Met Pro Thr Arg Phe Glu Asp Leu Met Glu Asn Leu Pro Leu Pro
                885                    890                    895
Glu Tyr Thr Lys Arg Asp Gly Arg Leu Asn Leu Ala Ser Arg Leu Pro
                900                    905                    910
Ser Tyr Phe Val Arg Pro Asp Leu Gly Pro Lys Met Tyr Asn Ala Tyr
                915                    920                    925
Gly Leu Ile Thr Ala Glu Asp Arg Arg Val Gly Thr Thr Asn Leu His
                930                    935                    940
Leu Asp Val Ser Asp Ala Val Asn Val Met Val Tyr Val Gly Ile Pro
945                    950                    955                    960
Ile Gly Glu Gly Ala His Asp Glu Glu Val Leu Lys Thr Ile Asp Glu
                965                    970                    975
Gly Asp Ala Asp Glu Val Thr Lys Gln Arg Ile His Asp Gly Lys Glu
                980                    985                    990
Lys Pro Gly Ala Leu Trp His Ile Tyr Ala Ala Lys Asp Ala Glu Lys
                995                    1000                   1005
Ile Arg Glu Leu Leu Arg Lys Val Gly Glu Glu Gln Gly Gln Glu Asn
                1010                   1015                   1020
Pro Pro Asp His Asp Pro Ile His Asp Gln Ser Trp Tyr Leu Asp Gln
1025                   1030                   1035                   1040
Thr Leu Arg Lys Arg Leu Tyr Glu Glu Tyr Gly Val Gln Gly Trp Ala
```

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            1045              1050           1055
Ile Val Gln Phe Leu Gly Asp Ala Val Phe Ile Pro Ala Gly Ala Pro
            1060              1065           1070
His Gln Val His Asn Leu Tyr Ser Cys Ile Lys Val Ala Glu Asp Phe
        1075              1080           1085
Val Ser Pro Glu His Val Lys His Cys Phe Arg Leu Thr Gln Glu Phe
    1090              1095           1100
Arg His Leu Ser Asn Thr His Thr Asn His Glu Asp Lys Leu Gln Val
1105              1110              1115           1120
Lys Asn Ile Ile Tyr His Ala Val Lys Asp Ala Val Gly Thr Leu Lys
            1125              1130           1135
Ala His Glu Ser Lys Leu Ala Arg Ser
            1140              1145
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<210> 4595
<211> 935
<212> DNA
<213> Homo sapiens

<400> 4595
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120
actcatttgc cccgcaggta gatcttgggg gtctgccagc cttcgggggc ttcctttagc
180
cccgccttca gccagatgcg cctcaggtct ttctcgaact tgatctgctt gcgtctcagg
240
cgtccctcct ggaccttcct ccgcaggaac cgcgtcttct tcaccagctt ccggtacttg
300
tggtggttca tcttccgccg gcggatcttc agcacgtttt tgcactgaat ttgaggcgca
360
tccgcgacgc cttcatcccc ctgctcggcc ccttccccta tctggctggg cggacactgg
420
taggattgcg gtggagccac agtccctgcg gtcccggtat ccagtctggg caggaagcag
480
cgggccgtga gccagctctc cagggggctg acggacatct tcctggggac cagcatctcc
540
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600
gatngtgctg taaaggggcc cgcagacccg gctgcccagc actccagaga cggccaaggc
660
gggtggccgc ctgcccaagg aacggcctca acagctggga agtcaggcgc cccaggagca
720
tggtctgtgg gcggcgccac aggtcccagg ggagcgaaag gtcccagaac ggggaggccg
780
gccccctccc cgggttcacc cccgcgcgaa tcgcgttgcc tggcgcccgg accctctcgg
840
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900
tcccaagccc gacctcgacg cggctcaaat tgacc
935
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<210> 4596

<211> 169
<212> PRT
<213> Homo sapiens

<400> 4596
Asp Cys Gly Gly Ala Thr Val Pro Ala Val Pro Val Ser Ser Leu Gly
1   5   10   15
Arg Lys Gln Arg Ala Val Ser Gln Leu Ser Arg Gly Leu Thr Asp Ile
            20   25   30
Phe Leu Gly Thr Ser Ile Ser Ser Ser Ser Trp Ala Pro Leu Arg
        35   40   45
Gly Arg Glu Ala Ala Leu Pro Gly Pro Ala Gly Asp Xaa Ala Val Lys
        50   55   60
Gly Pro Ala Asp Pro Ala Ala Gln His Ser Arg Asp Gly Gln Gly Gly
65   70   75   80
Trp Pro Pro Ala Gln Gly Thr Ala Ser Thr Ala Gly Lys Ser Gly Ala
                85   90   95
Pro Gly Ala Trp Ser Val Gly Gly Ala Thr Gly Pro Arg Gly Ala Lys
            100   105   110
Gly Pro Arg Thr Gly Arg Pro Ala Pro Ser Pro Gly Ser Pro Pro Arg
        115   120   125
Glu Ser Arg Cys Leu Ala Pro Gly Pro Ser Arg Leu Asp Pro Gly Pro
        130   135   140
Ala Xaa Ala Ala Ala Pro Gly Ala Leu Arg Pro Pro Ala Asp Pro Ser
145   150   155   160
Gln Ala Arg Pro Arg Arg Gly Ser Asn
                165

<210> 4597
<211> 515
<212> DNA
<213> Homo sapiens

<400> 4597
gtgcacatcc tgacagcaca cttcgtcctc tgcacgacaa ccctgaggga cggggcctcg
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ctgcagggc ggtgcagaca gagctgcagg acctgcttcc ctgcaggcaa tgtcctcctg
120
gggacactca tgctcagtga ctgatgggat ggggggtaca aagtcccagc cacgtgattc
180
tgggaggcca ttccagctca caactcctgg ccctgggga gtcggccgtg ggacctgcct
240
cacagctcag ctcctcctct cggccccatt ctgcctcctc ccggcccttt cccaggcagt
300
aagcccaagg aactccttaa gaaacatcct cactctgaac tccactgcag agccttcttc
360
ctgggaaagc agggagcgcc ccctgcaatc acgtaatgtt tactcatccg cctccttctc
420
ggagcacctt gacggaggat gctccccact agtgctacaa agcctagcac gtagaataag
480
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515

<210> 4598

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<211> 135
<212> PRT
<213> Homo sapiens

<400> 4598
Met Ser Ser Trp Gly His Ser Cys Ser Val Thr Asp Gly Met Gly Gly
1               5                  10                  15
Thr Lys Ser Gln Pro Arg Asp Ser Gly Arg Pro Phe Gln Leu Thr Thr
            20                  25                  30
Pro Gly Pro Trp Gly Val Gly Arg Gly Thr Cys Leu Thr Ala Gln Leu
        35                  40                  45
Leu Leu Ser Ala Pro Phe Cys Leu Leu Pro Ala Leu Ser Gln Ala Val
    50                  55                  60
Ser Pro Arg Asn Ser Leu Arg Asn Ile Leu Thr Leu Asn Ser Thr Ala
65                  70                  75                  80
Glu Pro Ser Ser Trp Glu Ser Arg Glu Arg Pro Leu Gln Ser Arg Asn
                85                  90                  95
Val Tyr Ser Ser Ala Ser Phe Ser Glu His Leu Asp Gly Gly Cys Ser
            100                 105                 110
Pro Leu Val Leu Gln Ser Leu Ala Arg Arg Ile Ser Ser Thr Trp Leu
        115                 120                 125
Val Asp Gln Ser Leu Arg Glu
    130                 135

<210> 4599
<211> 2314
<212> DNA
<213> Homo sapiens

<400> 4599
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ccacctctcc ccagccccgg agaggctgcg gagccgcagc cgcccagacc gcgcagcgcg
120
ggaggcaggt tccgcacgaa ataaatcaga atgagttatg cagaaaaacc cgatgaaatc
180
acgaaagatg agtggatgga aaagctcaat aacttgcatg tccagagagc agacatgaac
240
cgcctcatca tgaactacct ggtcacagag ggctttaagg aagcagcgga gaagtttcga
300
atggaatctg gaatcgaacc tagtgtggat ctggaaacac ttgatgaacg aatcaagatc
360
cgggagatga tactgaaagg tcagattcag gaggccatcg ccttgatcaa cagcctccac
420
ccagagctct ggacacaaa ccggtatctt tacttccatt tgcagcaaca gcatttgatc
480
gagctgatcc gccagcggga gacagaggcg gcgctggagt ttgcacagac tcagctggcg
540
gagcagggcg aggagagccg agagtgcctc acagagatgg agcgtaccct ggcactgctg
600
gcctttgaca gtcccgagga gtcgcccttc ggagacctcc tccacaccat gcagaggcag
660
aaggtgtgga gtgaagttaa ccaagctgtg ctagattatg aaaatcgcga gtcaacaccc
720
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aaactggcaa aattactgaa actactactt tgggctcaga acgagctgga ccagaagaaa
780
gtaaaatatc ccaaaatgac agacctcagc aagggtgtga ttgaggagcc caagtagcgc
840
ctgcgcttgc gtggtggatc caacaccagc cctgcgtcgt gggacttgcc tcagatcagc
900
ctgcgactgc aagattctta ctgcagtaga gaactctttt tctcccttgt actttttttt
960
gacctggcat ctttttatag ggaaaaatgg cctttgtagg cagtggaaaa cttgcaagga
1020
aagctgccgt ctctttggca gtctgatgca gagcctgcac tctggcactc gctgaagaat
1080
ctggaaggtt gcggtttgct cttccagtgt tcgggggcct ctggctgctg aaggattcgg
1140
tctaccacgg agggctgtgc tgttaggctg catcccactc aaaatacagg aaaagcacga
1200
atcatgattc tgctttctgt tagcttaggc agacattggg ccttcaccta caagtttttc
1260
cttacccctg tggtttttgt gttttttttt ttttcttttt ccataggaaa gaatatataa
1320
atttgtaaat cctaattcaa agatggctca tgtgtgaggg cattgagttt gatttgtttt
1380
ccctttggtc tgggttgtgt ggcttttggg ggatgcgtgt gagggggcta tgtgtttttt
1440
aatttttttaa atatatatttt tggtgctgtg tgtggtaaga gacttgttcc tagtggatca
1500
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1560
tgaccaaaat ggcctctaaa agatgttaat catctcaaat gacctttttgt ctttggggcg
1620
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1680
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1740
gcagagcccc agcaggtggt gcacgactgt tggcggaagg aacgcgtgtt catcctcagt
1800
gatctgccct ccagcatctc ggcagcatct catcctccat cgtcagccgg ctctgccgat
1860
gtcctgcttc tgttcactca cagaactgtc ccctgctccg tggtgggcag gagggaagtg
1920
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1980
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2160
gaatctggga tctcgcctta ttctcaagta gcaaggcatc tcgacaagca tggtctaggt
2220
ctggtggcca gcttgccagt acctgagccg gtcgggtcat ctgcctctga gggaccgtcc
2280
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2314
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<210> 4600
<211> 228
<212> PRT
<213> Homo sapiens

<400> 4600
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Glu Lys Leu Asn Asn Leu His Val Gln Arg Ala Asp Met Asn Arg Leu
            20   25   30
Ile Met Asn Tyr Leu Val Thr Glu Gly Phe Lys Glu Ala Ala Glu Lys
        35   40   45
Phe Arg Met Glu Ser Gly Ile Glu Pro Ser Val Asp Leu Glu Thr Leu
    50   55   60
Asp Glu Arg Ile Lys Ile Arg Glu Met Ile Leu Lys Gly Gln Ile Gln
65   70   75   80
Glu Ala Ile Ala Leu Ile Asn Ser Leu His Pro Glu Leu Leu Asp Thr
                85   90   95
Asn Arg Tyr Leu Tyr Phe His Leu Gln Gln Gln His Leu Ile Glu Leu
            100   105   110
Ile Arg Gln Arg Glu Thr Glu Ala Ala Leu Glu Phe Ala Gln Thr Gln
        115   120   125
Leu Ala Glu Gln Gly Glu Glu Ser Arg Glu Cys Leu Thr Glu Met Glu
    130   135   140
Arg Thr Leu Ala Leu Leu Ala Phe Asp Ser Pro Glu Glu Ser Pro Phe
145   150   155   160
Gly Asp Leu Leu His Thr Met Gln Arg Gln Lys Val Trp Ser Glu Val
                165   170   175
Asn Gln Ala Val Leu Asp Tyr Glu Asn Arg Glu Ser Thr Pro Lys Leu
            180   185   190
Ala Lys Leu Leu Lys Leu Leu Leu Trp Ala Gln Asn Glu Leu Asp Gln
        195   200   205
Lys Lys Val Lys Tyr Pro Lys Met Thr Asp Leu Ser Lys Gly Val Ile
    210   215   220
Glu Glu Pro Lys
225

<210> 4601
<211> 916
<212> DNA
<213> Homo sapiens

<400> 4601
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gaaacccaaa ttgtagctga cgaagcattt tgcaacgcag ttcggagtta ttatgaggtt
120
tttctaaaga gtgaccgagt ggccagaatg gtacagagtg agggtgttc tgctaatgac
180
ttcagagaag tatttaagaa aaacatagaa aaacgtgtgc ggagtttgcc agaaatagat
240
ggcttgagca aagagacagt gttgagctca tggatagcca aatatgatgc catttacaga
300

ggtgaagagg acttgtgcaa acagccaaat agaatggccc taagtgcagt gtctgaactt
360
attctgagca aggaacaact ctatgaaatg tttcagcaga ttctgggtat taaaaaacta
420
gaacaccagc tcctttataa tgcatgtcag ctggataacg cagatgaaca agcagcccag
480
atcagaaggg aacttgatgg ccggctgcaa ttggcagata aaatggcaaa ggaaagaaaa
540
ttccccaaat ttatagcaaa agatatggag aatatgtata tagaagagtt gcggtcttca
600
gtgaatttgc taatggccaa tttggaaagt cttccagttt cgaaaggtgg tccggaattt
660
aaattacaaa aattaaaacg ttcacagaac tctgcatttt tggacatagg agatgagaat
720
gagattcagc tgtcaaagtc cgacgtggta ctgtcattca ccttagagat tgtcataatg
780
gaagtgcaag gcctgaagtc agttgctccc aatcgaattg tttactgtac aatggaagtg
840
gaaggagaaa aacttcagac agaccaggcc gaagcctcaa ggccacaatg gggggactca
900
ggggaatttc acccc
916

<210> 4602
<211> 305
<212> PRT
<213> Homo sapiens

<400> 4602
Lys Leu Asn Lys Gln Gln Leu Gln Leu Leu Lys Glu Arg Phe Gln Ala
1   5   10   15
Phe Leu Asn Gly Glu Thr Gln Ile Val Ala Asp Glu Ala Phe Cys Asn
            20   25   30
Ala Val Arg Ser Tyr Tyr Glu Val Phe Leu Lys Ser Asp Arg Val Ala
        35   40   45
Arg Met Val Gln Ser Gly Gly Cys Ser Ala Asn Asp Phe Arg Glu Val
    50   55   60
Phe Lys Lys Asn Ile Glu Lys Arg Val Arg Ser Leu Pro Glu Ile Asp
65   70   75   80
Gly Leu Ser Lys Glu Thr Val Leu Ser Ser Trp Ile Ala Lys Tyr Asp
                85   90   95
Ala Ile Tyr Arg Gly Glu Glu Asp Leu Cys Lys Gln Pro Asn Arg Met
            100   105   110
Ala Leu Ser Ala Val Ser Glu Leu Ile Leu Ser Lys Glu Gln Leu Tyr
        115   120   125
Glu Met Phe Gln Gln Ile Leu Gly Ile Lys Lys Leu Glu His Gln Leu
    130   135   140
Leu Tyr Asn Ala Cys Gln Leu Asp Asn Ala Asp Glu Gln Ala Ala Gln
145   150   155   160
Ile Arg Arg Glu Leu Asp Gly Arg Leu Gln Leu Ala Asp Lys Met Ala
            165   170   175
Lys Glu Arg Lys Phe Pro Lys Phe Ile Ala Lys Asp Met Glu Asn Met
            180   185   190
Tyr Ile Glu Glu Leu Arg Ser Ser Val Asn Leu Leu Met Ala Asn Leu

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          195                    200                    205
Glu Ser Leu Pro Val Ser Lys Gly Gly Pro Glu Phe Lys Leu Gln Lys
    210                    215                    220
Leu Lys Arg Ser Gln Asn Ser Ala Phe Leu Asp Ile Gly Asp Glu Asn
225                    230                    235                    240
Glu Ile Gln Leu Ser Lys Ser Asp Val Val Leu Ser Phe Thr Leu Glu
              245                    250                    255
Ile Val Ile Met Glu Val Gln Gly Leu Lys Ser Val Ala Pro Asn Arg
          260                    265                    270
Ile Val Tyr Cys Thr Met Glu Val Glu Gly Glu Lys Leu Gln Thr Asp
      275                    280                    285
Gln Ala Glu Ala Ser Arg Pro Gln Trp Gly Asp Ser Gly Glu Phe His
      290                    295                    300
Pro
305
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<210> 4603
<211> 2090
<212> DNA
<213> Homo sapiens

<400> 4603
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tactttaccc ccatgaagcc cgagagtctg gagaactcca ttctggattc actggagcca
120
cagagcctgg ccagcctgct gagtgagtca gagagtcccc aggaagctgg ccgcgggcac
180
ccctccttcc tgccccagca gaaggaatca tctgaggcca gtgagctcat cctctactct
240
ctggaggcag aagtgacagt cacagggaca gacagccagt attgcaggaa ggaggtggag
300
gccgggcctg gagaccagca gggcgactcc tacctcaggg tgtcctccga cagcccaaag
360
gaccagagcc cgcctgagga ctcgggggag tcagaggccg acctggagtg cagcttcgca
420
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480
catttcccag gatgcgcagg tcccacagaa gatgagctgt ccctgcccga gggacccagc
540
gtccccagca gctccctacc ccagactccg gagcaggaga gttcctccg ccaccacttt
600
gagacactga ctgagtcccc ctgcagagct ctgggagacg tggaggcctc tgaagctgaa
660
gaccacttct caacccacg cctgagtatc tccacgcagt tcctctcaag cctccagaag
720
gcatccaggt tcacccatac cttccctccc cgggcaaccc agtgccttgt gaagtctcca
780
gaggtcaagc tcatggaccg aggcggaagc cagcccagag caggtactgg ctacgcctcc
840
ccagacagga cccacgtcct cgctgcaggg aaggctgaag agaccctgga ggcctggcgc
900
ccaccacctc cctgccttac gagcctggcg tcctgtgtcc ctgcttcctc cgtgctgccc
960
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acagatagga atctcccaac gcccacatct gcacccaccc caggcctggc tcagggtgtc
1020
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1080
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1140
cgtaggccat cgtccgttgg ggagctggcc tccttgggcc aggagcttca ggccatcacc
1200
accgcgacaa cacccagttt ggacagtgag ggccaagagc ctgccctgcg ttcctggggc
1260
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1320
ctgcccccccg tggataccca gcctggcgtc accgtccctg cagtgagctt cccagcccct
1380
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1440
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1500
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1560
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1620
tctccccttg agctgagcgg gtggggaaca tcttgcacag gctgcagacc accttccaag
1680
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1740
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1860
caccgacgct gtacccccctg gccagcccag acctgcaggc cctgctggaa cactactcgg
1920
agctgctggt gcaggccgtg cggaggaagg cacggggggca ctgagggcgc agcccctcca
1980
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2040
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa
2090
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<210> 4604
<211> 666
<212> PRT
<213> Homo sapiens

<400> 4604
Ala Glu Arg Ala Gly Gln Glu Pro Leu Lys Thr Ile Leu Asp Ala Gln
1   5   10   15
Asp Leu Asp Cys Tyr Phe Thr Pro Met Lys Pro Glu Ser Leu Glu Asn
            20   25   30
Ser Ile Leu Asp Ser Leu Glu Pro Gln Ser Leu Ala Ser Leu Leu Ser
        35   40   45
Glu Ser Glu Ser Pro Gln Glu Ala Gly Arg Gly His Pro Ser Phe Leu
    50   55   60
Pro Gln Gln Lys Glu Ser Ser Glu Ala Ser Glu Leu Ile Leu Tyr Ser

```
65                    70                    75                    80
Leu Glu Ala Glu Val Thr Val Thr Gly Thr Asp Ser Gln Tyr Cys Arg
                85                    90                    95
Lys Glu Val Glu Ala Gly Pro Gly Asp Gln Gln Gly Asp Ser Tyr Leu
                100                   105                   110
Arg Val Ser Ser Asp Ser Pro Lys Asp Gln Ser Pro Pro Glu Asp Ser
                115                   120                   125
Gly Glu Ser Glu Ala Asp Leu Glu Cys Ser Phe Ala Ala Ile His Ser
            130                   135                   140
Pro Ala Pro Pro Pro Asp Pro Ala Pro Arg Phe Ala Thr Ser Leu Pro
145                   150                   155                   160
His Phe Pro Gly Cys Ala Gly Pro Thr Glu Asp Glu Leu Ser Leu Pro
                165                   170                   175
Glu Gly Pro Ser Val Pro Ser Ser Ser Leu Pro Gln Thr Pro Glu Gln
                180                   185                   190
Glu Lys Phe Leu Arg His His Phe Glu Thr Leu Thr Glu Ser Pro Cys
            195                   200                   205
Arg Ala Leu Gly Asp Val Glu Ala Ser Glu Ala Glu Asp His Phe Phe
        210                   215                   220
Asn Pro Arg Leu Ser Ile Ser Thr Gln Phe Leu Ser Ser Leu Gln Lys
225                   230                   235                   240
Ala Ser Arg Phe Thr His Thr Phe Pro Pro Arg Ala Thr Gln Cys Leu
                245                   250                   255
Val Lys Ser Pro Glu Val Lys Leu Met Asp Arg Gly Gly Ser Gln Pro
            260                   265                   270
Arg Ala Gly Thr Gly Tyr Ala Ser Pro Asp Arg Thr His Val Leu Ala
        275                   280                   285
Ala Gly Lys Ala Glu Glu Thr Leu Glu Ala Trp Arg Pro Pro Pro Pro
    290                   295                   300
Cys Leu Thr Ser Leu Ala Ser Cys Val Pro Ala Ser Ser Val Leu Pro
305                   310                   315                   320
Thr Asp Arg Asn Leu Pro Thr Pro Thr Ser Ala Pro Thr Pro Gly Leu
                325                   330                   335
Ala Gln Gly Val His Ala Pro Ser Thr Cys Ser Tyr Met Glu Ala Thr
            340                   345                   350
Ala Ser Ser Arg Ala Arg Ile Ser Arg Ser Ile Ser Leu Gly Asp Ser
            355                   360                   365
Glu Gly Pro Ile Val Ala Thr Leu Ala Gln Pro Leu Arg Arg Pro Ser
        370                   375                   380
Ser Val Gly Glu Leu Ala Ser Leu Gly Gln Glu Leu Gln Ala Ile Thr
385                   390                   395                   400
Thr Ala Thr Thr Pro Ser Leu Asp Ser Glu Gly Gln Glu Pro Ala Leu
                405                   410                   415
Arg Ser Trp Gly Asn His Glu Ala Arg Ala Asn Leu Arg Leu Thr Leu
                420                   425                   430
Ser Ser Ala Cys Asp Gly Leu Leu Leu Pro Pro Val Asp Thr Gln Pro
            435                   440                   445
Gly Val Thr Val Pro Ala Val Ser Phe Pro Ala Pro Ser Pro Val Glu
        450                   455                   460
Glu Ser Ala Leu Arg Leu His Gly Ser Ala Phe Arg Pro Ser Leu Pro
465                   470                   475                   480
Ala Pro Glu Ser Pro Gly Leu Pro Ala His Pro Ser Asn Pro Gln Leu
            485                   490                   495
Pro Glu Ala Arg Pro Gly Ile Pro Gly Gly Thr Ala Ser Leu Leu Glu
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                                    3804

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            500                     505                     510
Pro Thr Ser Gly Ala Leu Gly Leu Phe Gln Gly Ser Pro Ala Arg Trp
        515                     520                     525
Ser Glu Pro Trp Val Pro Val Glu Ala Leu Pro Pro Ser Pro Leu Glu
    530                     535                     540
Leu Ser Gly Trp Gly Thr Ser Cys Thr Gly Cys Arg Pro Pro Ser Lys
545                     550                     555                     560
Lys Pro Ser Thr Phe Thr Val Cys Trp Ser Pro Val Ala Arg Trp Thr
                565                     570                     575
Pro Gly Ser Ser Arg His Gly Leu Ser Trp Ser Pro Pro Ser Cys Gly
            580                     585                     590
Ser Thr Ala Ser Trp Arg Leu Asn Ala Trp Trp Gly Leu Val Trp Pro
        595                     600                     605
Gln Pro Arg Leu Cys Pro Ala Gln Asp Pro Arg Pro His Arg Arg Cys
    610                     615                     620
Thr Pro Trp Pro Ala Gln Thr Cys Arg Pro Cys Trp Asn Thr Thr Arg
625                     630                     635                     640
Ser Cys Trp Cys Arg Pro Cys Gly Gly Arg His Gly Gly Thr Glu Gly
                645                     650                     655
Ala Ala Pro Pro Pro Gln Pro Cys Cys Phe
            660                     665
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<210> 4605
<211> 2998
<212> DNA
<213> Homo sapiens

<400> 4605

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120
gacctgaaag tggactgtgt ggccaccggg cttcccaatc ccgagatctc ctggagcctc
180
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240
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300
ggagactaca cctgctttgc tgaaaatcag gtcgggaagg acgagatgag agtcagagtc
360
aaggtggtga cagcgcccgc caccatccgg aacaagactt gcttggcggt tcaggtgccc
420
tatggagacg tggtcactgt agcctgtgag gccaaggaga acccatgcc caaggtgact
480
tggttgtccc caaccaacaa ggtgatcccc acctcctctg agaagtatca gatataccaa
540
gatggcactc tccttattca gaaagcccag cgttctgaca gcggcaacta cacctgcttg
600
gtcaggaaca gcgcgggaga ggataggaag acggtgtgga ttcacgtcaa cgtccagcca
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720
agtcggaaac tgattgactg caaagctgaa ggcatcccca ccccgagggt gttatgggct
780
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tttcccgagg gtgtggttct gccagctcca tactatggaa accggatcac tgtccatggc
840
aacggttccc tggacatcag gagtttgagg aagagcgact ccgtccagct ggtatgcatg
900
gcacgcaacg agggaggga ggccaggttg atcctgcagc tcactgtcct ggagcccatg
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1020
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1080
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1260
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1380
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1560
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1680
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1740
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1800
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1860
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1920
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1980
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2040
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2100
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2160
ggaacattca tcaaaaataa gccatagaca tgaacaacac ctcactaccc cattgaagac
2220
gcatcaccta gttaacctgc tgcagttttt acatgataga ctttgttcca gattgacaag
2280
tcatctttca gttatttcct ctgtcacttc aaaactccag cttgcccaat aaggatttag
2340
aaccagagtg actgatatat atatatattt taattcagag ttacatacat acagctacca
2400
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2520
tattaaaatt aataaattat tggtctttac aagacttgga tacattacag cagacatgga
2580
aatataattt taaaaaattt ctctccaacc tccttcaaat tcagtcacca ctgttatatt
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accttctcca ggaaccctcc agtggggaag gctgcgatat tagatttcct tgtatgcaaa
2700
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2760
taactttaca gaattgaatc tagagtcttc cccgaaaagc ccagaaactt ctctgcagta
2820
tctggcttgt ccatctggtc taaggtggct gcttcttccc cagccatgag tcagtttgtg
2880
cccatgaata atacacgacc tgttatttcc atgactgctt tactgtattt ttaaggtcaa
2940
tatactgtac atttgataat aaaataatat tctcccaaaa aaaaaaaaaa aaaaaaag
2998

<210> 4606
<211> 584
<212> PRT
<213> Homo sapiens

<400> 4606
Ile Glu His Lys Glu Glu Asn Asp His Lys Val Phe Tyr Gly Gly Asp
 1   5   10   15
Leu Lys Val Asp Cys Val Ala Thr Gly Leu Pro Asn Pro Glu Ile Ser
            20   25   30
Trp Ser Leu Pro Asp Gly Ser Leu Val Asn Ser Phe Met Gln Ser Asp
        35   40   45
Asp Ser Gly Gly Arg Thr Lys Arg Tyr Val Val Phe Asn Asn Gly Thr
    50   55   60
Leu Tyr Phe Asn Glu Val Gly Met Arg Glu Glu Gly Asp Tyr Thr Cys
65   70   75   80
Phe Ala Glu Asn Gln Val Gly Lys Asp Glu Met Arg Val Arg Val Lys
                85   90   95
Val Val Thr Ala Pro Ala Thr Ile Arg Asn Lys Thr Cys Leu Ala Val
            100   105   110
Gln Val Pro Tyr Gly Asp Val Val Thr Val Ala Cys Glu Ala Lys Gly
        115   120   125
Glu Pro Met Pro Lys Val Thr Trp Leu Ser Pro Thr Asn Lys Val Ile
    130   135   140
Pro Thr Ser Ser Glu Lys Tyr Gln Ile Tyr Gln Asp Gly Thr Leu Leu
145   150   155   160
Ile Gln Lys Ala Gln Arg Ser Asp Ser Gly Asn Tyr Thr Cys Leu Val
                165   170   175
Arg Asn Ser Ala Gly Glu Asp Arg Lys Thr Val Trp Ile His Val Asn
            180   185   190
Val Gln Pro Pro Lys Ile Asn Gly Asn Pro Asn Pro Ile Thr Thr Val
        195   200   205
Arg Glu Ile Ala Ala Gly Gly Ser Arg Lys Leu Ile Asp Cys Lys Ala

```
           210                          215                      220
Glu Gly Ile Pro Thr Pro Arg Val Leu Trp Ala Phe Pro Glu Gly Val
225                     230                     235                     240
Val Leu Pro Ala Pro Tyr Tyr Gly Asn Arg Ile Thr Val His Gly Asn
                245                     250                     255
Gly Ser Leu Asp Ile Arg Ser Leu Arg Lys Ser Asp Ser Val Gln Leu
                260                     265                     270
Val Cys Met Ala Arg Asn Glu Gly Gly Glu Ala Arg Leu Ile Leu Gln
                275                     280                     285
Leu Thr Val Leu Glu Pro Met Glu Lys Pro Ile Phe His Asp Pro Ile
                290                     295                     300
Ser Glu Lys Ile Thr Ala Met Ala Gly His Thr Ile Ser Leu Asn Cys
305                     310                     315                     320
Ser Ala Ala Gly Thr Pro Thr Pro Ser Leu Val Trp Val Leu Pro Asn
                325                     330                     335
Gly Thr Asp Leu Gln Ser Gly Gln Gln Leu Gln Arg Phe Tyr His Lys
                340                     345                     350
Ala Asp Gly Met Leu His Ile Ser Gly Leu Ser Ser Val Asp Ala Gly
                355                     360                     365
Ala Tyr Arg Cys Val Ala Arg Asn Ala Ala Gly His Thr Glu Arg Leu
                370                     375                     380
Val Ser Leu Lys Val Gly Leu Lys Pro Glu Ala Asn Lys Gln Tyr His
385                     390                     395                     400
Asn Leu Val Ser Ile Ile Asn Gly Glu Thr Leu Lys Leu Pro Cys Thr
                405                     410                     415
Pro Pro Gly Ala Gly Gln Gly Arg Phe Ser Trp Thr Leu Pro Asn Gly
                420                     425                     430
Met His Leu Glu Gly Pro Gln Thr Leu Gly Arg Val Ser Leu Leu Asp
                435                     440                     445
Asn Gly Thr Leu Thr Val Arg Glu Ala Ser Val Phe Asp Arg Gly Thr
                450                     455                     460
Tyr Val Cys Arg Met Glu Thr Glu Tyr Gly Pro Ser Val Thr Ser Ile
465                     470                     475                     480
Pro Val Ile Val Ile Ala Tyr Pro Pro Arg Ile Thr Ser Glu Pro Thr
                485                     490                     495
Pro Val Ile Tyr Thr Arg Pro Gly Asn Thr Val Lys Leu Asn Cys Met
                500                     505                     510
Ala Met Gly Ile Pro Lys Ala Asp Ile Thr Trp Glu Leu Pro Asp Lys
                515                     520                     525
Ser His Leu Lys Ala Gly Val Gln Ala Arg Leu Tyr Gly Asn Arg Phe
                530                     535                     540
Leu His Pro Gln Gly Ser Leu Thr Ile Gln His Ala Thr Gln Arg Asp
545                     550                     555                     560
Ala Gly Phe Tyr Lys Cys Met Ala Lys Asn Ile Leu Gly Ser Asp Ser
                565                     570                     575
Lys Thr Thr Tyr Ile His Val Phe
                580
```

<210> 4607

<211> 456

<212> DNA

<213> Homo sapiens

<400> 4607

```
nnagatctct gagggataga ttgccagaga aggggaagtt tcagtccagg catatgtgca
60
gagccttgat caattgagga aaagaaaggc tgttttacac aagagagaag ctgatgttgt
120
ttatgcactt cctaggtagt tagaaacaaa cctgtggcaa ggcaggctcc tggcaaacgg
180
aagtgcaatt gtcggcaaga gatgcggacc acccagctgg ccctgggcg cttccaaatg
240
acccaggagg tggtctgcga cgaatgccct aatgtcaaac tagtgaatga agaacgaacg
300.
ctggaagtag aaatagagcc tggggtgaga gacggcatgg agtacccctt tattggagaa
360
ggtgagcctc acgtggatgg gnagcctgga gatttacggt tccgaatcaa agttgtcaag
420
cacccaatat ttgaaaggag aggagatgat ctgtac
456
```

<210> 4608
<211> 107
<212> PRT
<213> Homo sapiens

<400> 4608

```
Val Val Arg Asn Lys Pro Val Ala Arg Gln Ala Pro Gly Lys Arg Lys
 1               5                  10                  15
Cys Asn Cys Arg Gln Glu Met Arg Thr Thr Gln Leu Gly Pro Gly Arg
            20                  25                  30
Phe Gln Met Thr Gln Glu Val Val Cys Asp Glu Cys Pro Asn Val Lys
        35                  40                  45
Leu Val Asn Glu Glu Arg Thr Leu Glu Val Glu Ile Glu Pro Gly Val
    50                  55                  60
Arg Asp Gly Met Glu Tyr Pro Phe Ile Gly Glu Gly Glu Pro His Val
65                  70                  75                  80
Asp Gly Xaa Pro Gly Asp Leu Arg Phe Arg Ile Lys Val Val Lys His
            85                  90                  95
Pro Ile Phe Glu Arg Arg Gly Asp Asp Leu Tyr
            100                 105
```

<210> 4609
<211> 904
<212> DNA
<213> Homo sapiens

<400> 4609

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ncggccgccg cgctgcagat ggcggaaatg gatccggtag ccgagttccc ccagcctccc
60
ggtgctgcgc gctgggctga ggttatggct cgcttcgcgg ccaggctggg cgcgcagggc
120
cggcgggtgg tgttggttac gtcaggcggc accaaggtcc cactggaagc gcggccggtg
180
cgcttcctgg acaacttcag cagcgggcgg cgcggtgcaa cctcggccga ggccttccta
240
gccgccggct acggggtcct gttcttgtat cgcgctcgct ctgccttccc ctatgcccac
300
```

cgcttcccac cccagacttg gctgtccgct ctgcggcctt cgggcccagc cctttcgggc
360
ttgctgagcc tggaggccga ggagaatgca cttccgggtt ttgctgaggc tctgaggagc
420
taccaggagg ctgcggctgc aggcaccttc ctggcagtag agttcaccac tttggcggac
480
tatttgcatc tgttgcaggc tgcggcccag gcactcaatc cgctaggccc ttctgcgatg
540
ttttacctgg ctgcggctgt gtcagatttc tatgttcctg tctctgaaat gcctgaacac
600
aagatccagt catctggggg cccactgcag ggaaaagttc agttagaaga catacttcac
660
catcttgaaa aagaagaaat caatcccctt gctactacag aagaacaact ctgtttggtg
720
cttattccag ccagcacagt gaagacaggc tgaggactgc taccacagat gtagaagagc
780
ttatagtgaa gcacatgggt gaaacaaaag aagtgagaac taatagcata gaattttaaa
840
gacacctgtg attttgttca ttgcccttca ttaaattgac atattaaaaa aaaaaaaaaa
900 .   ..
aaaa
904

<210> 4610
<211> 250
<212> PRT
<213> Homo sapiens

<400> 4610
Xaa Ala Ala Ala Leu Gln Met Ala Glu Met Asp Pro Val Ala Glu Phe
 1   5   10   15
Pro Gln Pro Pro Gly Ala Ala Arg Trp Ala Glu Val Met Ala Arg Phe
             20   25   30
Ala Ala Arg Leu Gly Ala Gln Gly Arg Arg Val Val Leu Val Thr Ser
         35   40   45
Gly Gly Thr Lys Val Pro Leu Glu Ala Arg Pro Val Arg Phe Leu Asp
     50   55   60
Asn Phe Ser Ser Gly Arg Arg Gly Ala Thr Ser Ala Glu Ala Phe Leu
 65   70   75   80
Ala Ala Gly Tyr Gly Val Leu Phe Leu Tyr Arg Ala Arg Ser Ala Phe
                 85   90   95
Pro Tyr Ala His Arg Phe Pro Pro Gln Thr Trp Leu Ser Ala Leu Arg
            100   105   110
Pro Ser Gly Pro Ala Leu Ser Gly Leu Leu Ser Leu Glu Ala Glu Glu
  ·   115   120   125
Asn Ala Leu Pro Gly Phe Ala Glu Ala Leu Arg Ser Tyr Gln Glu Ala
        130   135   140
Ala Ala Ala Gly Thr Phe Leu Ala Val Glu Phe Thr Thr Leu Ala Asp
145   150   155   160
Tyr Leu His Leu Leu Gln Ala Ala Ala Gln Ala Leu Asn Pro Leu Gly
                165   170   175
Pro Ser Ala Met Phe Tyr Leu Ala Ala Ala Val Ser Asp Phe Tyr Val
            180   185   190
Pro Val Ser Glu Met Pro Glu His Lys Ile Gln Ser Ser Gly Gly Pro

```
            195                  200                  205
Leu Gln Gly Lys Val Gln Leu Glu Asp Ile Leu His His Leu Glu Lys
    210                  215                  220
Glu Glu Ile Asn Pro Leu Ala Thr Thr Glu Glu Gln Leu Cys Leu Val
225                  230                  235                  240
Leu Ile Pro Ala Ser Thr Val Lys Thr Gly
                245                  250
```

<210> 4611
<211> 1946
<212> DNA
<213> Homo sapiens

<400> 4611

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cccggggctt cggcggcggc ggcccgcgag gggcctgggc gcatgcgcag cgaggttcca
60
cgtgagcgcc tgcgtttctc ctcaaaccta acgatgccgc cggagcggag gagacgaatg
120
aaactggacc ggagaaccgg agcgaagccg aagcggaagc ccggaatgag gccggactgg
180
aaagccggag cggggccagg cgggcctccc caaaagcctg cccccttcatc ccagcggaaa
240
ccgccggccc ggccgagcgc ggcggccgct gcgattgcag tcgcggcggc ggaggaagag
300
agacggctcc ggcagcggaa ccgcctgagg ctggaggagg acaaaccggc cgtggagcgg
360
tgcttggagg agctggtctt cggcgacgtc gagaacgacg aggacgcgtt gctgcggcgt
420
ctgcgaggcc cgagggttca agaacatgaa gactcgggtg actcagaagt ggagaatgaa
480
gcaaaaggta attttccacc tcaaaagaag ccagtttggg tggatgaaga agatgaagat
540
gaggaaatgg ttgacatgat gaacaatcgg tttcggaagg atatgatgaa aaatgctagt
600
gaaagtaaac tttcgaaaga caaccttaaa aagagactta agaagaatt ccaacatgcc
660
atgggaggag tacctgcctg ggcagagact actaagcgga aaacatcttc agatgatgaa
720
agtgaagagg atgaagatga tttgttgcaa aggactggga atttcatatc cacatcaact
780
tctcttccaa gaggcatctt gaagatgaag aactgccagc atgcgaatgc tgaacgtcct
840
actgttgctc ggatctcatc tgtgcagttc catcccggtg cacagattgt gatggttgct
900
ggattagata atgctgtatc actatttcag gttgatggga aaacaaatcc taaaattcag
960
agcatctatt tggaaaggtt tccaatcttt aaggcttgtt ttagtgctaa tggggaagaa
1020
gttttagcca cgagtaccca cagcaaggtt ctttatgtct atgacatgct ggctggaaag
1080
ttaattcctg tgcatcaagt gagaggtttg aaagagaaga tagtgaggag ctttgaagtc
1140
tccccagatg ggtccttctt gctcataaat ggcattgctg atatttgca tttgctagca
1200
```

atgaagacca aagaactgat tggaagcatg aaaattaatg gaagggttgc agcatccaca
1260
ttctcttcag atagtaagaa agtatacgcc tcttcggggg atggagaagt ttatgtttgg
1320
gatgtgaact caaggaagtg ccttaacaga tttgttgatg aaggcagttt atatggatta
1380
agcattgcca catctaggaa tggacagtat gttgcttgtg gttctaattg tggagtggta
1440
aatatataca atcaagattc ttgtctccaa gaaacaaacc caaagccaat aaaagctata
1500
atgaacttgg ttacaggtgt tacttctctg accttcaatc ctactacaga aatcttggca
1560
attgcttcag aaaaaatgaa agaagcagtc agattggttc atcttccttc ctgtacagta
1620
ttttcaaact tcccagtcat taaaaataag aatatttctc atgttcatac catggatttt
1680
tctccgagaa gtggatactt tgccttgggg aatgaaaagg gcaaggccct gatgtatagg
1740
ttgcaccatt actcagactt ctaaagagac tatttgaagt ccagttgagt cacaagagaa
1800
gcctgtcttg atatatcatc tcagaaactt tcctgaatat gtgataatat atggaaaatg
1860
atttatagat ccagctgtgc ttaagagcca gtaatgtctt aataaacatg tggcagcttt
1920
tgtttgaaaa aaaaaaaaaa aaaaaa
1946

<210> 4612
<211> 532
<212> PRT
<213> Homo sapiens

<400> 4612
Met Arg Pro Asp Trp Lys Ala Gly Ala Gly Pro Gly Gly Pro Pro Gln
1   5   10   15
Lys Pro Ala Pro Ser Ser Gln Arg Lys Pro Pro Ala Arg Pro Ser Ala
            20   25   30
Ala Ala Ala Ala Ile Ala Val Ala Ala Ala Glu Glu Glu Arg Arg Leu
            35   40   45
Arg Gln Arg Asn Arg Leu Arg Leu Glu Glu Asp Lys Pro Ala Val Glu
        50   55   60
Arg Cys Leu Glu Glu Leu Val Phe Gly Asp Val Glu Asn Asp Glu Asp
65   70   75   80
Ala Leu Leu Arg Arg Leu Arg Gly Pro Arg Val Gln Glu His Glu Asp
                85   90   95
Ser Gly Asp Ser Glu Val Glu Asn Glu Ala Lys Gly Asn Phe Pro Pro
            100   105   110
Gln Lys Lys Pro Val Trp Val Asp Glu Glu Asp Glu Asp Glu Glu Met
        115   120   125
Val Asp Met Met Asn Asn Arg Phe Arg Lys Asp Met Met Lys Asn Ala
        130   135   140
Ser Glu Ser Lys Leu Ser Lys Asp Asn Leu Lys Lys Arg Leu Lys Glu
145   150   155   160
Glu Phe Gln His Ala Met Gly Gly Val Pro Ala Trp Ala Glu Thr Thr

```
                      165                  170                  175
Lys Arg Lys Thr Ser Ser Asp Asp Glu Ser Glu Glu Asp Glu Asp Asp
            180                  185                  190
Leu Leu Gln Arg Thr Gly Asn Phe Ile Ser Thr Ser Thr Ser Leu Pro
            195                  200                  205
Arg Gly Ile Leu Lys Met Lys Asn Cys Gln His Ala Asn Ala Glu Arg
        210                  215                  220
Pro Thr Val Ala Arg Ile Ser Ser Val Gln Phe His Pro Gly Ala Gln
225                  230                  235                  240
Ile Val Met Val Ala Gly Leu Asp Asn Ala Val Ser Leu Phe Gln Val
            245                  250                  255
Asp Gly Lys Thr Asn Pro Lys Ile Gln Ser Ile Tyr Leu Glu Arg Phe
            260                  265                  270
Pro Ile Phe Lys Ala Cys Phe Ser Ala Asn Gly Glu Glu Val Leu Ala
            275                  280                  285
Thr Ser Thr His Ser Lys Val Leu Tyr Val Tyr Asp Met Leu Ala Gly
        290                  295                  300
Lys Leu Ile Pro Val His Gln Val Arg Gly Leu Lys Glu Lys Ile Val
305                  310                  315                  320
Arg Ser Phe Glu Val Ser Pro Asp Gly Ser Phe Leu Leu Ile Asn Gly
            325                  330                  335
Ile Ala Gly Tyr Leu His Leu Leu Ala Met Lys Thr Lys Glu Leu Ile
            340                  345                  350
Gly Ser Met Lys Ile-Asn Gly Arg Val Ala Ala Ser Thr Phe Ser Ser
            355                  360                  365
Asp Ser Lys Lys Val Tyr Ala Ser Ser Gly Asp Gly Glu Val Tyr Val
            370                  375                  380
Trp Asp Val Asn Ser Arg Lys Cys Leu Asn Arg Phe Val Asp Glu Gly
385                  390                  395                  400
Ser Leu Tyr Gly Leu Ser Ile Ala Thr Ser Arg Asn Gly Gln Tyr Val
            405                  410                  415
Ala Cys Gly Ser Asn Cys Gly Val Val Asn Ile Tyr Asn Gln Asp Ser
        420                  425                  430
Cys Leu Gln Glu Thr Asn Pro Lys Pro Ile Lys Ala Ile Met Asn Leu
        435                  440                  445
Val Thr Gly Val Thr Ser Leu Thr Phe Asn Pro Thr Thr Glu Ile Leu
        450                  455                  460
Ala Ile Ala Ser Glu Lys Met Lys Glu Ala Val Arg Leu Val His Leu
465                  470                  475                  480
Pro Ser Cys Thr Val Phe Ser Asn Phe Pro Val Ile Lys Asn Lys Asn
            485                  490                  495
Ile Ser His Val His Thr Met Asp Phe Ser Pro Arg Ser Gly Tyr Phe
            500                  505                  510
Ala Leu Gly Asn Glu Lys Gly Lys Ala Leu Met Tyr Arg Leu His His
        515                  520                  525
Tyr Ser Asp Phe
        530
```

<210> 4613
<211> 454
<212> DNA
<213> Homo sapiens

<400> 4613

cggccgcgtg tacacacagg cctataatag tgacacgctg gtgagtgttc tgggcactgt
60
gcctgcagtg ttcccttgcg gggcagggtc tgtcctacac atgcacaagc tctggtgttt
120
ctttaaggcg tttgatttct gaagattgac aaggttctgt ttattgtata ttatgtttaa
180
tgatctcagt tgtaatattg tcaagatttg ggttgtgaag attaggaagt ccttacagtg
240
aaactcattg ctcatcgtga gattcccgtt tgtaaactca tttccacgtg taaactcatt
300
tgacgttggg gccagacagg tgacaggaga gggagttggg cctcgtgggg atagtggcaa
360
attgggacgt ggcatgtttt cattaaagcg aggtgttcct ccctgtcggc tgcgtgtctc
420
tgtggcatgg ggctagcctg ccctgcccct gcag
454

<210> 4614
<211> 117
<212> PRT
<213> Homo sapiens

<400> 4614
Met Pro Arg Pro Asn Leu Pro Leu Ser—Pro Arg Gly Pro Thr Pro Ser
1   5   10   15
Pro Val Thr Cys Leu Ala Pro Thr Ser Asn Glu Phe Thr Arg Gly Asn
            20   25   30
Glu Phe Thr Asn Gly Asn Leu Thr Met Ser Asn Glu Phe His Cys Lys
        35   40   45
Asp Phe Leu Ile Phe Thr Thr Gln Ile Leu Thr Ile Leu Gln Leu Arg
    50   55   60
Ser Leu Asn Ile Ile Tyr Asn Lys Gln Asn Leu Val Asn Leu Gln Lys
65   70   75   80
Ser Asn Ala Leu Lys Lys His Gln Ser Leu Cys Met Cys Arg Thr Asp
            85   90   95
Pro Ala Pro Gln Gly Asn Thr Ala Gly Thr Val Pro Arg Thr Leu Thr
            100   105   110
Ser Val Ser Leu Leu
        115

<210> 4615
<211> 1350
<212> DNA
<213> Homo sapiens

<400> 4615
nntgattcgg tcccgctgtc ctaggcggga tggtgccgct gtgccaggtt gaagtattgt
60
attttgcaaa aagtgctgaa ataacaggag ttcgttcaga gaccatttct gtgcctcaag
120
aaataaaagc gttgcagctg tggaaggaga tagaaactcg acatcctgga ttggctgatg
180
ttagaaatca gataatattt gctgttcgtc aagaatatgt cgagcttgga gatcagctcc
240

```
tcgtgcttca gcctggagac gaaattgccg ttatcccccc cattagtgga ggatagtgct
300
tttgagccat ctaggaaaga tatggatgaa gttgaagaga aatctaaaga tgttataaac
360
tttactgccg agaaactttc agtagatgaa gtctcacagt tggtgatttc tccgctctgt
420
ggtgcaatat ccctatttgt agggactaca agaaataact ttgaagggaa aaaagtcatt
480
agcttagaat atgaagcata tctacccatg gcggaaaatg aagtcagaaa gatttgtagt
540
gacattaggc agaaatggcc agtcaaacac atagcagtgt tccatctgct tggcttggtt
600
ccagtgtcag aagcaagcac agttattgct gtgtcctcag cccacagagc tgcatctctt
660
gaagctgtga gctatgccat tgattcttta aaagccaagg tgcccatatg gaaaaaggaa
720
atatatgaag agtcatcaac ttggaaagga aacaaagagt gcttttgggc atccaacagt
780
taatcactta tgtttttaga gcatgcaatc ttaactttgt taaactatta ttattgatca
840
cattttgatt tttttctctc cacatcagga tagtttactg aagcacaatc tcttatacta
900
gtgggacaaa agggagaaaa aggaagcaag ataaatgggt atgtaggatg aagggttatt
960
taaaatggaa ctaaagatag aaggaggact gtaggaagaa atggaataat ttaaatgtga
1020
ggaaagatat ctgtggtaga catgtccttc catgactaat ttctaattgt aactcaacac
1080
acattgaggt atgggccctc ctcagtgact ttaactagct cagaaacgta ctcccccacc
1140
aaccccacct caccgccccc catcccggtt ctgggagagc attgttatta aggatgcatg
1200
acaggaatgt tggcagaact ggaaagtatt aaaaaagcat tatcagacag tcttgatatt
1260
atacattttc agaaatatat taaaaataat aaactaaaac ccatgatttc aaaagtttaa
1320
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa
1350
```

```
<210> 4616
<211> 188
<212> PRT
<213> Homo sapiens

<400> 4616
Met Ser Ser Leu Glu Ile Ser Ser Ser Cys Phe Ser Leu Glu Thr Lys
1               5                   10                  15
Leu Pro Leu Ser Pro Pro Leu Val Glu Asp Ser Ala Phe Glu Pro Ser
            20                  25                  30
Arg Lys Asp Met Asp Glu Val Glu Glu Lys Ser Lys Asp Val Ile Asn
        35                  40                  45
Phe Thr Ala Glu Lys Leu Ser Val Asp Glu Val Ser Gln Leu Val Ile
    50                  55                  60
Ser Pro Leu Cys Gly Ala Ile Ser Leu Phe Val Gly Thr Thr Arg Asn
```

```
65                     70              75              80
Asn Phe Glu Gly Lys Lys Val Ile Ser Leu Glu Tyr Glu Ala Tyr Leu
                     85              90              95
Pro Met Ala Glu Asn Glu Val Arg Lys Ile Cys Ser Asp Ile Arg Gln
              100             105             110
Lys Trp Pro Val Lys His Ile Ala Val Phe His Leu Leu Gly Leu Val
              115             120             125
Pro Val Ser Glu Ala Ser Thr Val Ile Ala Val Ser Ser Ala His Arg
              130             135             140
Ala Ala Ser Leu Glu Ala Val Ser Tyr Ala Ile Asp Ser Leu Lys Ala
145             150             155             160
Lys Val Pro Ile Trp Lys Lys Glu Ile Tyr Glu Glu Ser Ser Thr Trp
              165             170             .175
Lys Gly Asn Lys Glu Cys Phe Trp Ala Ser Asn Ser
              180             185
```

<210> 4617
<211> 2266
<212> DNA
<213> Homo sapiens

<400> 4617
tccggagccg ggggactgcg acggcctgtc gcctggacaa caaggaaagc gagtcctggg
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gggctctgct gagcggagag cggctggaca cctggatctg ctccctcctg ggttccctca
120
tggtggggct cagtggggtc ttcccgttgc ttgtcattcc cctagagatg gggaccatgc
180
tgcgctcaga agctggggcc tgggcgcctg aagcagctgc tcagcttcgc cctgggggga
240
ctcttgggca atgtgtttct gcatctgctg cccgaagcct gggcctacac gtgcagcgcc
300
agccctggtg gtgaggggca gagcctgcag cagcagcaac agctggggct gtgggtcatt
360
gctggcatcc tgaccttcct ggcgttggag aagatgttcc tggacagcaa ggaggagggg
420
accagccagg cccccaacaa agaccccact gctgctgccg ccgcactcaa tggaggccac
480
tgtctggccc agccgactgc agagcccggc ctcggtgccg tggtccggag catcaaagtc
540 .
agcggctacc tcaacctgct ggccaacacc atcgataact tcacccacgg gctggctgtg
600
gctgccagct ccttgtgag caagaagatc gggctcctga caaccatggc catcctcctg
660
catgagatcc cccatgaggt gggcgacttt gccatcctgc tccgggccgg ctttgaccga
720
tggagcgcag ccaagctgca actctcaaca gcgctggggg gcctactggg cgctggcttc
780
gccatctgta cccagtcccc caagggagta gaggagacgg cagcctgggt cctgcccttc
840
acctctggcg gctttctcta catcgccttg gtgaacgtgc tccctgacct cttggaagaa
900
gaggacccgt ggcgctccct gcagcagctg cttctgctct gtgcgggcat cgtggtaatg
960
```

```
gtgctgttct cgctcttcgt ggattaactt tccctgatgc cgacgcccct gcccccctgca
1020
gcaataagat gctcggattc actctgtgac cgcatatgtg agaggcagag agggcgagtg
1080
gctgcgagag agaatgagcc tcccgccaga caggagggag gtgcgtgtgg atgtatgtgg
1140
tgtgcacatg tggccagagg tgtgtgcgcg agaccgacac tgtgatccct gtgctgggtc
1200
cggggcccag tgtagcgcct gtccccagcc atgctgtggt tacctctcct tgccgccctg
1260
tcaccttcac ctcctggagt aagcagcgag gaagagcagc actggtccca agcagaggcc
1320
ttgccctgct gggaccccgg gagtgagagc agcccaagga tcccagggtg cagggaactc
1380
cagagctgcc cacctcccac tgccccctca gcacacacac agtccccagg cggcctaggg
1440
gccaaggctg ggggcggctt tggtcccttt tcctggctct tccttcccca cttctaagcc
1500
aaagaaagga gaggcaggtg ctcctgtacc ccagccccac tcagcactga cagtccccag
1560
ctcctagtag tgagctggga ggcgcttcct aagacccttt cctcagggct gccctgggag
1620
ctcattcctg gccaacacgc cctggcagca ccagcagctc ttgccacctc cagctgccaa
1680
acagcagcct gccgggcagg gagcagcccc aggccagaga ggcctcccgg tccagctcag
1740
ggatgctcct gccagcacag gggccaggga ctcctggagc aggcacatag tgagcccggg
1800
cagccctgcc cagctcaggc ccctttcctt ccccattgag gttggggtag gtgggggcgg
1860
tgagggctcc acgttgtcag cgctcaggaa tgtgctccgg cagagtgctg aagccataat
1920
ccccaaccat ttcccttggc tgacgcccag gtactcagct ggcccactcc acagccaggc
1980
ctggccctgc ccttcaccgt ggatgtttc agaagtggcc atcgagaggt ctggatggtt
2040
ttatagcaac tttgctgtga ttccgtttgt atctgtaaat atttgttcta tagataagat
2100
acaaataaat attatccaca tactggctgc cttggttctg cacgccttcc atgggcagca
2160
gggccttcct tactgccact gccaggccct tttttctgaa aaaaaaaaaa aaaaaaaaaa
2220
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaa
2266
```

```
<210> 4618
<211> 197
<212> PRT
<213> Homo sapiens

<400> 4618
Met Phe Leu Asp Ser Lys Glu Glu Gly Thr Ser Gln Ala Pro Asn Lys
1               5                   10                  15
Asp Pro Thr Ala Ala Ala Ala Ala Leu Asn Gly Gly His Cys Leu Ala
```

```
                  20                    25                    30
Gln Pro Thr Ala Glu Pro Gly Leu Gly Ala Val Val Arg Ser Ile Lys
            35                    40                    45
Val Ser Gly Tyr Leu Asn Leu Leu Ala Asn Thr Ile Asp Asn Phe Thr
            50                    55                    60
His Gly Leu Ala Val Ala Ala Ser Phe Leu Val Ser Lys Lys Ile Gly
65                    70                    75                    80
Leu Leu Thr Thr Met Ala Ile Leu Leu His Glu Ile Pro His Glu Val
                85                    90                    95
Gly Asp Phe Ala Ile Leu Leu Arg Ala Gly Phe Asp Arg Trp Ser Ala
            100                   105                   110
Ala Lys Leu Gln Leu Ser Thr Ala Leu Gly Gly Leu Leu Gly Ala Gly
            115                   120                   125
Phe Ala Ile Cys Thr Gln Ser Pro Lys Gly Val Glu Glu Thr Ala Ala
            130                   135                   140
Trp Val Leu Pro Phe Thr Ser Gly Gly Phe Leu Tyr Ile Ala Leu Val
145                   150                   155                   160
Asn Val Leu Pro Asp Leu Leu Glu Glu Glu Asp Pro Trp Arg Ser Leu
                165                   170                   175
Gln Gln Leu Leu Leu Leu Cys Ala Gly Ile Val Val Met Val Leu Phe
                180                   185                   190
Ser Leu Phe Val Asp
            195


<210> 4619
<211> 539
<212> DNA
<213> Homo sapiens

<400> 4619
cggggacttc ttgattgagg tagggacaca ggtgtctgta tctttctgct tggggagagc
60
gccgactctc ggggagaggg tcgtagtcct ggcagcacag ccacgaggcc cagtctgggg
120
gtgcttgtgg aggctgccat gaactttcat tggtcaattt ctcccacccg ggggtgcacc
180
tgcctgggaa cctggggttg ggcctggctt gaaggccttg gccgtaaccc gttggaagga
240
ggaaaagtct gtggaatttg gtcattggtc ttgaagtaga aggtagaaag aggaggcatg
300
tggtccccat gatgttgggg acatgtgcag acctgtgggt ggtttagttg ttgcttaata
360
gggccccaag aggagtcatt gtcctttctt gtgtcctatg ggtgagtcgg caaccactct
420
tgtgtggcag ttgctggcgt gaggtctgta acattgatgg ctaagagctt gtagatttgc
480
aggttgtgat aaccacccca tcagatggac gatggccttc caagaccaag gagcccggg
539


<210> 4620
<211> 103
<212> PRT
<213> Homo sapiens
```

<400> 4620
Met Gly Thr Thr Cys Leu Leu Phe Leu Pro Ser Thr Ser Arg Pro Met
1   5   10   15
Thr Lys Phe His Arg Leu Phe Leu Leu Pro Thr Gly Tyr Gly Gln Gly
                20   25   30
Leu Gln Ala Arg Pro Asn Pro Arg Phe Pro Gly Arg Cys Thr Pro Gly
            35   40   45
Trp Glu Lys Leu Thr Asn Glu Ser Ser Trp Gln Pro Pro Gln Ala Pro
        50   55   60
Pro Asp Trp Ala Ser Trp Leu Cys Cys Gln Asp Tyr Asp Pro Leu Pro
65   70   75   80
Glu Ser Arg Arg Ser Pro Gln Ala Glu Arg Tyr Arg His Leu Cys Pro
                85   90   95
Tyr Leu Asn Gln Glu Val Pro
                100

<210> 4621
<211> 2588
<212> DNA
<213> Homo sapiens

<400> 4621
ncttcctctc tggccgcgag cccctcttgt gattggtaag accttcccag ctgtgacagc
60
tgagcccaac tcgactctgt gaaacgtacc ccacccccca gccttcttc cagtccccct
120
cttccatgag gagacccact ctgctcccac cctctgaaaa cctaaagcac agcccaaatc
180
ccccacccca gcagcatacc tagggagctc ctagtcctgg taaaacggca ggagtagggc
240
tggggatgct gagaaaggaa ccaggaatcc tgtccaggca ggtcctacct ctgcccatgt
300
ggctggccct catgtctggg tcttctcact ctactctcat tactcctccg cgcctgtcaa
360
acccctcatt gttcgcagct gatgtcactc gcagttgtga gcggccgcct ctcccgggga
420
caatgtggga ctgagcggcc cagccgccgt gccgccgccg ccgccgccgc aggacagccc
480
cagcgaggcc atttccagca catagaagag agattggaaa ccaacgtgca gaactgccag
540
tcccctgaca cgctgtgccc cacccactgc agcccagtgc tgaatgaacc ctgcccagag
600
gtgtctgtag tgagcttctg ccctagtgac ttttgagccg gccaggttgc agcgcggaca
660
cactcgcagg tcgctgtggc cccagcctcg cctgacagaa tgagcggctc ggacggggga
720
ctggaggagg agccagagct cagcatcacc ctcacgctgc ggatgctgat gcacgggaag
780
gaagtgggca gcatcatcgg gaagaagggc gagactgtaa agcgaatccg ggagcagagc
840
agtgcccgga tcaccatctc cgagggctcc tgccctgaac gcatcaccac catcaccggg
900
tctacagcag ctgtcttcca tgcagtctcc atgattgctt tcaaactgga tgaggacctt
960

```
tgtgctgctc ctgcaaatgg tggaaatgtc tccaggcctc cagtgaccct gcgccttgtc
1020
atccctgcca gtcagtgtgg ctcactgatt gggaaggctg gcaccaagat caaggagatc
1080
cgagagacta cgggtgccca ggtacaggtg gcaggggacc tgctccccaa ctccacagag
1140
cgagctgtta cggtatctgg ggtgcctgat gccatcatcc tgtgtgtgcg ccagatctgc
1200
gctgttatcc tggagtcccc acccaaagga gccactatcc cctaccatcc gagcctctcc
1260
ctaggtactg ttcttctctc tgccaaccag ggcttctctg tccagggtca gtatggggct
1320
gtgaccccag ctgaggtcac caagctccag cagctctcaa gccatgcggt ccccttttgcc
1380
acacccagcg tggtgccagg actggatccc ggcacacaga ccagctcaca ggagttcttg
1440
gttcccaacg atttgattgg ctgtgtgatc gggcgccagg gcagcaagat cagcgagatc
1500
cggcagatgt caggggcaca tatcaagatc gggaaccaag cagagggcgc tggggagcgg
1560
catgtcacca tcactggctc tccggtctcc atcgccctgg cccagtacct catcactgcc
1620
tgtctagaga cggccaagtc tacctctggg gggacgcctg gctcagcccc cgcagacctg
1680
cccaccccttt tctcgccacc cctgacggcc ctgcccacag ctcccccagg cctgctgggc
1740
acaccttatg ccatctccct ctccaacttc atcggcctca gcctgtgcc cttcctggct
1800
ctaccacctg cttccccagg gccaccgccg ggcttggcgg cctacactgc caagatggca
1860
gcggccaatg ggagcaagaa agctgaacgg cagaaattct ccccctactg aggccagctg
1920
aggtacaggc aggggcaggc aggaccacca gcaggggggct gcctctgcac cctacccgcc
1980
caaggagact ccaccctggg gtcccaaacg ccgctaacgc ccagacgcat ggatgcaccc
2040
cctaccctgc ctccatctat gggagttctt tctctcagag tgggggcagt ttctggccca
2100
ggggtctgag ctgcggcagc cccagggcag ggggccctac ctcctcagct ctgtgcttgg
2160
atacagggag cagccaggag actccctagt gcccccacca tggcgggtgt cactcacgca
2220
ctccccatcc cttagggctt cctggcctac tgcatccttg tgggagtcag ggaggagggc
2280
ccgttgggta gctggggcca ggcttctctc cccaccacct gcagatttct tgctgcttcc
2340
actgataccc ttttgactgg aatgaactgg ctgggcttgt caggggcac cccaaagagg
2400
gggcactgcc aggtagctgg gggagtggca tggggcaggg gcccagttct cagcagcaga
2460
cactctgtac agttttttca atccctgttt ttgaataaat attctcagcg accaaaaaaa
2520
aaaaaaaaaa aaaaaaaaa aaaacacaac aaaacttacc attcctcctt actcaaacac
2580
```

```
cccccccct
2588
```

```
<210> 4622
<211> 403
<212> PRT
<213> Homo sapiens
```

```
<400> 4622
Met Ser Gly Ser Asp Gly Gly Leu Glu Glu Glu Pro Glu Leu Ser Ile
1               5                   10                  15
Thr Leu Thr Leu Arg Met Leu Met His Gly Lys Glu Val Gly Ser Ile
            20                  25                  30
Ile Gly Lys Lys Gly Glu Thr Val Lys Arg Ile Arg Glu Gln Ser Ser
        35                  40                  45
Ala Arg Ile Thr Ile Ser Glu Gly Ser Cys Pro Glu Arg Ile Thr Thr
    50                  55                  60
Ile Thr Gly Ser Thr Ala Ala Val Phe His Ala Val Ser Met Ile Ala
65                  70                  75                  80
Phe Lys Leu Asp Glu Asp Leu Cys Ala Ala Pro Ala Asn Gly Gly Asn
                85                  90                  95
Val Ser Arg Pro Pro Val Thr Leu Arg Leu Val Ile Pro Ala Ser Gln
            100                 105                 110
Cys Gly Ser Leu Ile Gly Lys Ala Gly Thr Lys Ile Lys Glu Ile Arg
        115                 120                 125
Glu Thr Thr Gly Ala Gln Val Gln Val Ala Gly Asp Leu Leu Pro Asn
    130                 135                 140
Ser Thr Glu Arg Ala Val Thr Val Ser Gly Val Pro Asp Ala Ile Ile
145                 150                 155                 160
Leu Cys Val Arg Gln Ile Cys Ala Val Ile Leu Glu Ser Pro Pro Lys
                165                 170                 175
Gly Ala Thr Ile Pro Tyr His Pro Ser Leu Ser Leu Gly Thr Val Leu
            180                 185                 190
Leu Ser Ala Asn Gln Gly Phe Ser Val Gln Gly Gln Tyr Gly Ala Val
        195                 200                 205
Thr Pro Ala Glu Val Thr Lys Leu Gln Gln Leu Ser Ser His Ala Val
    210                 215                 220
Pro Phe Ala Thr Pro Ser Val Val Pro Gly Leu Asp Pro Gly Thr Gln
225                 230                 235                 240
Thr Ser Ser Gln Glu Phe Leu Val Pro Asn Asp Leu Ile Gly Cys Val
                245                 250                 255
Ile Gly Arg Gln Gly Ser Lys Ile Ser Glu Ile Arg Gln Met Ser Gly
            260                 265                 270
Ala His Ile Lys Ile Gly Asn Gln Ala Glu Gly Ala Gly Glu Arg His
        275                 280                 285
Val Thr Ile Thr Gly Ser Pro Val Ser Ile Ala Leu Ala Gln Tyr Leu
    290                 295                 300
Ile Thr Ala Cys Leu Glu Thr Ala Lys Ser Thr Ser Gly Gly Thr Pro
305                 310                 315                 320
Gly Ser Ala Pro Ala Asp Leu Pro Thr Pro Phe Ser Pro Pro Leu Thr
                325                 330                 335
Ala Leu Pro Thr Ala Pro Pro Gly Leu Leu Gly Thr Pro Tyr Ala Ile
            340                 345                 350
Ser Leu Ser Asn Phe Ile Gly Leu Lys Pro Val Pro Phe Leu Ala Leu
```

```
         355                    360                    365
Pro Pro Ala Ser Pro Gly Pro Pro Pro Gly Leu Ala Ala Tyr Thr Ala
     370                    375                    380
Lys Met Ala Ala Ala Asn Gly Ser Lys Lys Ala Glu Arg Gln Lys Phe
385                    390                    395                    400
Ser Pro Tyr
```

```
<210> 4623
<211> 2220
<212> DNA
<213> Homo sapiens

<400> 4623
ntgatcacca agacacacaa agtagacctt gggctcccag agaagaaaaa gaagaagaaa
60
gtggtcaaag aaccagagac tcgatactca gttttaaaca atgatgatta ctttgctgat
120
gtttctcctt taagagctac atcccctct aagagtgtgg cccatgggca ggcacctgag
180
atgcctctag tgaagaaaaa gaagaagaaa aagaagggtg tcagcaccct ttgcgaggag
240
catgtagaac ctgagaccac gctgcctgct agacggacag agaagtcacc cagcctcagg
300
aagcaggtgt ttggccactt ggagttcctc agtggggaaa agaaaaataa gaagtcacct
360
ctagccatgt cccatgcctc tggggtgaaa acctccccag accctagaca gggtgaggag
420
gaaaccagag ttggcaagaa gctcaaaaaa cacaagaagg aaaaaaaggg ggcccaggac
480
cccacagcct tctcggtcca ggacccttgg ttctgtgagg ccagggaggc cagggatgtt
540
ggggacactt gctcagtggg gaagaaggat gaggaacagg cagccttggg gcagaaacgg
600
aagcggaaga gccccagaga acacaatggg aaggtgaaga agaaaaaaaa aatccaccag
660
gagggagatg ccctcccagg ccactccaag ccctccaggt ccatggagag cagccctagg
720
aaaggaagta aaaagaagcc agtcaaagtt gaggctccgg aatacatccc cataagtgat
780
gaccctaagg cctccgcaaa gaaaaagatg aagtccaaaa agaaggtaga gcagccagtc
840
atcgaggagc cagctctgaa aaggaagaaa aagaagaaga ggaaagagag tggggtagca
900
ggagacctt ggaaggagga aacagacacg gacttagagg tggtgttgga aaaaaaaggc
960
aacatggatg aggcgcacat agaccaggtg aggcgaaagg ccttgcaaga agagatcgat
1020
cgcgagtcag gcaaaacgga agcttctgaa accaggaagt ggacgggaac ccagtttggc
1080
cagtgggata ctgctggttt tgagaacgag gaccaaaaac tgaaatttct cagacttatg
1140
ggtggcttca aaaacctgtc cccttcgttc agccgccccg ccagcacgat tgcaaggccc
1200
```

```
aacatggccc tcggcaagaa ggcggctgac agcctgcagc agaatctgca gcgggactac
1260
gaccgggcca tgagctggaa gtacagccgg ggagccggcc tcggcttctc caccgccccc
1320
aacaagatct tttacattga caggaacgct tccaagtcag tcaagctgga agattaaact
1380
ctagagtttt gtccccccaa aactgccaca attgctttga ttattccatt tatgctggag
1440
attacaaatt ttttttgtga aaaaatcaga tcttggtgag gacctcgagc agtaagatat
1500
aaataactcc cataagctta gcgttccagt aatggaacac taggcataaa tggtttattc
1560
agttgtgcaa atgaaagcca tctgacagtt ggctcacatt gaacacctgt ggagattaag
1620
gacgaggaca actatattga tgggcttgga tgaactgggg cagggcagct catatttcgg
1680
gagccaggag aacgagtgag tgctaaaacc tcctgttttc tgtgttaaac attccgtccc
1740
tgtttgagac atcagtatgt acagttaact tttgttgagt gtttagcagg tactagggac
1800
atactagtgt tttccttaat gtatttaatc ttcataatta tgaaatgggt gctattatta
1860
gccccatctt atagatgagg caactgaggt tcaggataaa agtaataaaa ttgcctgggg
1920
tcacccagcc actaagtgca gggtgttgta cttttgtacc cgaagcccta agttcactat
1980
tcgccactct gaatgtcccc tttagggaat ttccaccaga atcctcgttg gggattgaaa
2040
tgtctttaga tggaggaaaa agttttatga caagtctgca tctctgataa aaagtggagt
2100
gaatgaggaa cggagaatcg caagctcctt ttccttcctt ttcctttccc ctgtcataga
2160
gcagctgtag gcagagaggt gtctgagttg ttaccaaaca catgtgactg agctgctgct
2220
```

```
<210> 4624
<211> 189
<212> PRT
<213> Homo sapiens
```

```
<400> 4624
Met Lys Ser Lys Lys Lys Val Glu Gln Pro Val Ile Glu Glu Pro Ala
 1               5                  10                  15
Leu Lys Arg Lys Lys Lys Lys Arg Lys Glu Ser Gly Val Ala Gly
                20                  25                  30
Asp Pro Trp Lys Glu Glu Thr Asp Thr Asp Leu Glu Val Val Leu Glu
        35                  40                  45
Lys Lys Gly Asn Met Asp Glu Ala His Ile Asp Gln Val Arg Arg Lys
    50                  55                  60
Ala Leu Gln Glu Glu Ile Asp Arg Glu Ser Gly Lys Thr Glu Ala Ser
65                  70                  75                  80
Glu Thr Arg Lys Trp Thr Gly Thr Gln Phe Gly Gln Trp Asp Thr Ala
                85                  90                  95
Gly Phe Glu Asn Glu Asp Gln Lys Leu Lys Phe Leu Arg Leu Met Gly
```

3823

```
                    100                  105                 110
Gly Phe Lys Asn Leu Ser Pro Ser Phe Ser Arg Pro Ala Ser Thr Ile
            115                  120                 125
Ala Arg Pro Asn Met Ala Leu Gly Lys Lys Ala Ala Asp Ser Leu Gln
        130                  135                 140
Gln Asn Leu Gln Arg Asp Tyr Asp Arg Ala Met Ser Trp Lys Tyr Ser
145                  150                  155                 160
Arg Gly Ala Gly Leu Gly Phe Ser Thr Ala Pro Asn Lys Ile Phe Tyr
                165                  170                 175
Ile Asp Arg Asn Ala Ser Lys Ser Val Lys Leu Glu Asp
            180                  185
```

```
<210> 4625
<211> 334
<212> DNA
<213> Homo sapiens
```

```
<400> 4625
cgggagcagc ggaagctgca ggagaaggag cagcagcggc ggctggagga catgcaggct
60
ctgcggcggg aggaggagcg gcggcaggcg gagcgcgagc aggaatacaa gcggaaacag
120
ctggaggagc agcggcagtc agaacgtctc cagaggcagc tgcagcagga gcatgcctac
180
ctaaagtccc tgcagcagca gcaacagcag cagcagcttc agaaacagca gcagcagcag
240
ctcctgcctg gggacaggaa gcccctgtac cattatgggc ggggcatgaa tcccgctgac
300
aaaccagcct gggcccgaga gggagaagag agac
334
```

```
<210> 4626
<211> 111
<212> PRT
<213> Homo sapiens
```

```
<400> 4626
Arg Glu Gln Arg Lys Leu Gln Glu Lys Glu Gln Gln Arg Arg Leu Glu
  1           5               10                  15
Asp Met Gln Ala Leu Arg Arg Glu Glu Glu Arg Arg Gln Ala Glu Arg
            20                  25                  30
Glu Gln Glu Tyr Lys Arg Lys Gln Leu Glu Glu Gln Arg Gln Ser Glu
            35                  40                  45
Arg Leu Gln Arg Gln Leu Gln Gln Glu His Ala Tyr Leu Lys Ser Leu
        50                  55                  60
Gln Gln Gln Gln Gln Gln Gln Gln Leu Gln Lys Gln Gln Gln Gln Gln
65                  70                  75                  80
Leu Leu Pro Gly Asp Arg Lys Pro Leu Tyr His Tyr Gly Arg Gly Met
                85                  90                  95
Asn Pro Ala Asp Lys Pro Ala Trp Ala Arg Glu Gly Glu Glu Arg
            100                 105                 110
```

```
<210> 4627
<211> 1736
```

```
<212> DNA
<213> Homo sapiens

<400> 4627
nnagttgcct tgacctgcag ctccggcacc gcggacccgc cttctgccct cagcagcaga
60
cgctctgtcc cgcccgggca gctctgcgag gcagcggctg gagagggaac catggggact
120
gtgcacgccc ggagtttgga gcctcttcca tcaagtggac ctgattttgg aggattagga
180
gaagaagctg aatttgttga agttgagcct gaagctaaac aggaaattct tgaaaacaaa
240
gatgtggttg ttcaacatgt tcattttgat ggacttggaa ggactaaaga tgatatcatc
300
atttgtgaaa ttggagatgt tttcaaggcc aaaaacctaa ttgaggtaat gcggaaatct
360
catgaagccc gtgaaaaatt gctccgtctt ggaattttta gacaagtgga tgttttgatt
420
gacacatgtc aaggtgatgg cgcacttcca aatgggttag acgttacctt tgaagtaact
480
gaattgagga gattaacggg cagttataac accatggttg ggaacaatga aggcagtatg
540
gtacttggcc tcaagcttcc taatcttctt ggtcgtgcag aaaaggtgac ctttcagttt
600
tcctatggaa caaaagaaac ttcgtatggc ctgtccttct tcaaaccacg gcccggaaac
660
ttcgaaagaa atttctctgt aaacttatat aaagttactg gacagttccc cttggagctca
720
ctgcgggaga cggacagagg aatgtcagct gagtacagtt ttcccatatg gaagaccagc
780
cacactgtca gtgggaagg cgtatggcga gaactgggct gcctctcaag gacggcgtca
840
tttgctgttc gaaaagaaag cggacattca ctgaaatcat ctctttcgca cgccatggtc
900
atcgattctc ggaattcttc catcttacca aggagaggtg ctttgctgaa agttaaccag
960
gaactggcag gctacactgg cggggatgtg agcttcatca agaagattt tgaacttcag
1020
ttgaacaagc aactcatatt tgattcagtt ttttcagcgt ctttctgggg cggaatgttg
1080
gtacccattg gtgataagcc gtcaagcatt gctgataggt tttaccttgg gggacccaca
1140
agcgtccgcg gattcagcat gcacagcatc gggccacaga gcgaaggaga ctacctaggt
1200
ggagaagcgt actgggccgg cggcctgcac ctctacaccc cattacctttt ccggccaggc
1260
cagggtggct ttggagaact tttccgaaca cacttctttc tcaacgcagg aaacctctgc
1320
aacctcaact atggggaggg ccccaaagct catattcgta agctggctga gtgcatccgc
1380
tggtcgtacg gggccgggat tgtcctcagg cttggcaaca tcgctcggtt ggaacttaat
1440
tactgcgtcc ccatgggagt acagacaggc gacaggatat gtgatggcgt ccagtttgga
1500
```

gctgggataa ggttcctgta gccgacaccc ctacaggaga agctctggga ctggggcagc
1560
agcaaggcgc ccatgccaca caccgtctct cgaggaaacg cggttcagcg attctttgac
1620
tgcggaccct gtgggaaacc ccgtcaataa atgttaaaga cacactcaaa aaaaaaaaa
1680
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaa
1736

<210> 4628
<211> 469
<212> PRT
<213> Homo sapiens

<400> 4628
Met Gly Thr Val His Ala Arg Ser Leu Glu Pro Leu Pro Ser Ser Gly
 1   5   10   15
Pro Asp Phe Gly Gly Leu Gly Glu Glu Ala Glu Phe Val Glu Val Glu
                20   25   30
Pro Glu Ala Lys Gln Glu Ile Leu Glu Asn Lys Asp Val Val Val Gln
            35   40   45
His Val His Phe Asp Gly Leu Gly Arg Thr Lys Asp Asp Ile Ile Ile
        50   55   60
Cys Glu Ile Gly Asp Val Phe Lys Ala Lys-Asn Leu Ile Glu Val Met
65   70   75   80
Arg Lys Ser His Glu Ala Arg Glu Lys Leu Leu Arg Leu Gly Ile Phe
                85   90   95
Arg Gln Val Asp Val Leu Ile Asp Thr Cys Gln Gly Asp Gly Ala Leu
            100   105   110
Pro Asn Gly Leu Asp Val Thr Phe Glu Val Thr Glu Leu Arg Arg Leu
        115   120   125
Thr Gly Ser Tyr Asn Thr Met Val Gly Asn Asn Glu Gly Ser Met Val
        130   135   140
Leu Gly Leu Lys Leu Pro Asn Leu Leu Gly Arg Ala Glu Lys Val Thr
145   150   155   160
Phe Gln Phe Ser Tyr Gly Thr Lys Glu Thr Ser Tyr Gly Leu Ser Phe
                165   170   175
Phe Lys Pro Arg Pro Gly Asn Phe Glu Arg Asn Phe Ser Val Asn Leu
            180   185   190
Tyr Lys Val Thr Gly Gln Phe Pro Trp Ser Ser Leu Arg Glu Thr Asp
            195   200   205
Arg Gly Met Ser Ala Glu Tyr Ser Phe Pro Ile Trp Lys Thr Ser His
        210   215   220
Thr Val Lys Trp Glu Gly Val Trp Arg Glu Leu Gly Cys Leu Ser Arg
225   230   235   240
Thr Ala Ser Phe Ala Val Arg Lys Glu Ser Gly His Ser Leu Lys Ser
                245   250   255
Ser Leu Ser His Ala Met Val Ile Asp Ser Arg Asn Ser Ser Ile Leu
            260   265   270
Pro Arg Arg Gly Ala Leu Leu Lys Val Asn Gln Glu Leu Ala Gly Tyr
            275   280   285
Thr Gly Gly Asp Val Ser Phe Ile Lys Glu Asp Phe Glu Leu Gln Leu
        290   295   300
Asn Lys Gln Leu Ile Phe Asp Ser Val Phe Ser Ala Ser Phe Trp Gly

```
    305                     310                     315                     320
Gly Met Leu Val Pro Ile Gly Asp Lys Pro Ser Ser Ile Ala Asp Arg
                325                     330                     335
Phe Tyr Leu Gly Gly Pro Thr Ser Val Arg Gly Phe Ser Met His Ser
                340                     345                     350
Ile Gly Pro Gln Ser Glu Gly Asp Tyr Leu Gly Gly Glu Ala Tyr Trp
            355                     360                     365
Ala Gly Gly Leu His Leu Tyr Thr Pro Leu Pro Phe Arg Pro Gly Gln
        370                     375                     380
Gly Gly Phe Gly Glu Leu Phe Arg Thr His Phe Phe Leu Asn Ala Gly
385                     390                     395                     400
Asn Leu Cys Asn Leu Asn Tyr Gly Glu Gly Pro Lys Ala His Ile Arg
                405                     410                     415
Lys Leu Ala Glu Cys Ile Arg Trp Ser Tyr Gly Ala Gly Ile Val Leu
                420                     425                     430
Arg Leu Gly Asn Ile Ala Arg Leu Glu Leu Asn Tyr Cys Val Pro Met
            435                     440                     445
Gly Val Gln Thr Gly Asp Arg Ile Cys Asp Gly Val Gln Phe Gly Ala
        450                     455                     460
Gly Ile Arg Phe Leu
465


<210> 4629
<211> 706
<212> DNA
<213> Homo sapiens

<400> 4629
acgcgtgggc cggagaccca gcgtggggg cgcagaggga gtccccctga gctgggcgcg
60
tcctcccgcg gcggtccgct ccttaagtcc cctgtgcgtc acctccttgc gtcggtcgcc
120
agcacccgca ttgcttcggc cctagtgcag gggcagcacg tgcgcactga accctggagt
180
cctgatctct agcctagctc aaagcctcca ccaggatcgg gtggcagctt ccatttgagg
240
ccatttctag gccagcggcc cagctgccag cttcacgtct cctgagttgg gggatctctg
300
gtccctgtc ctgctttgtg gccaagggag cccaggatcc tggccagagg atgggcccgc
360
accccactcc tggttctggg tgcagttcgg cagatgggaa tccaggagct cagcttggac
420
accctcccca cctccggctc caagcccggt tccaagagga cccagggctg agcagaggct
480
tgtccccaat atcctcccct gccctcatc tttcctattt gaggggaagac tgacaccctc
540
aaagcccagc tggaggcatc tctgcccatt ctgcttagac ttagcgcacc ctggtctctg
600
ctcgaggaat ctgccctcag ctcccccat tctgggggtc cacccaacac ccacacacac
660
ttccacggac caccctctct ctccctattg accatgccct cctctc
706


<210> 4630
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<211> 140
<212> PRT
<213> Homo sapiens

<400> 4630
Met Val Asn Arg Glu Arg Glu Gly Gly Pro Trp Lys Cys Val Trp Val
1               5                   10                  15
Leu Gly Gly Pro Pro Glu Trp Gly Glu Leu Arg Ala Asp Ser Ser Ser
            20                  25                  30
Arg Asp Gln Gly Ala Leu Ser Leu Ser Arg Met Gly Arg Asp Ala Ser
        35                  40                  45
Ser Trp Ala Leu Arg Val Ser Val Phe Pro Gln Ile Gly Lys Met Arg
    50                  55                  60
Gly Arg Gly Gly Tyr Trp Gly Gln Ala Ser Ala Gln Pro Trp Val Leu
65                  70                  75                  80
Leu Glu Pro Gly Leu Glu Pro Glu Val Gly Arg Val Ser Lys Leu Ser
            85                  90                  95
Ser Trp Ile Pro Ile Cys Arg Thr Ala Pro Arg Thr Arg Ser Gly Val
            100                 105                 110
Arg Ala His Pro Leu Ala Arg Ile Leu Gly Ser Leu Gly His Lys Ala
        115                 120                 125
Gly Gln Gly Thr Arg Asp Pro Pro Thr Gln Glu Thr
    130                 135                 140

<210> 4631
<211> 2756
<212> DNA
<213> Homo sapiens

<400> 4631
cggccgccgg agcgctttgg gaaggcgcac ggggcgaaga tggcggcgga gcgacaggag
60
gcgctgaggg agttcgtggc ggtgacgggc gccgaggagg accgggcccg cttctttctc
120
gagtcggccg gctgggactt gcagatcgcg ctagcgagct tttatgagga cggaggggat
180
gaagacattg tgaccatttc gcaggcaacc cccagttcag tgtccagagg cacagccccc
240
agtgataata gagtgacatc cttcagagac ctcattcatg accaagatga agatgaggag
300
gaagaggaag gccagaggag caggttttat gctgggggct cagagagaag tggacagcag
360
attgttggcc ctcccaggaa gaaaagtccc aacgagctgg tggatgatct ctttaaaggt
420
gccaaagagc atggagctgt agctgtggag cgagtgacca agagccctgg agagaccagt
480
aaaccgagac catttgcagg aggtggctac cgccttgggg cagcaccaga ggaagagtct
540
gcctatgtgg caggagaaaa gaggcagcat tccagccaag atgttcatgt agtattgaaa
600
ctctggaaga gtggattcag cctggataat ggagaactca gaagctacca gacccatcc
660
aatgcccagt ttctggagtc tatccgcaga ggggaggtgc cagcagagct tcggaggcta
720
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gctcacggtg gacaggtgaa cttggatatg gaggaccatc gggacgagga ctttgtgaag
780
cccaaaggag ccttcaaagc cttcactggc gagggtcaga aactgggcag cactgccccc
840
caggtgttga gtaccagctc tccagcccaa caggcagaaa atgaagccaa agccagctct
900
tccatcttaa tcgacgaatc agagcctacc acaaacatcc aaattcggct tgcagacggc
960
gggaggctgg tgcagaaatt taaccacagc cacaggatca gcgacatccg actcttcatc
1020
gtggatgccc ggccagccat ggctgccacc agctttatcc tcatgactac tttcccgaac
1080
aaagagctgg ctgatgagag ccagaccctg aaggaagcca acctgctcaa tgctgtcatc
1140
gtgcagcggt taacataacc gcccagccag ctgcctggcc tccctcctgt gtttcccatg
1200
gccagtggcc atgccccatg gggatcgccc ctcctgcccc cttgtgcata cccagcagtc
1260
cagtgcaacg tctcctccat agctctgggt tcttagatct tggttggacg tttgttttct
1320
ccttagttgc atttcctggg tttttgtgat gatcaatgga ctttaatgaa aaaaaaaata
1380
aaaacaacca aaaaaattga aggaatatca ccagcatgtt gtacggaaac tctcccactg
1440
aagcaggctt taattgcttt aaaattatat ttatcttggg gcctgtggga ggaaacttcc
1500
ttccatcttc tctgcataaa aacttgtggc acacaatgct tattcactag tgtgtcccac
1560
ccgccagccc cacagatgac tggaggaagg aggggaaatg tgtagaaaga ggcttcgcca
1620
ccacttgttc ccacgagaat atgtcacttg cccagataaa actgggcggc agccagagtt
1680
ccctgaagtg ggaagtcaga gctccatgca cacagtgtct tcagaaggtg aaaataaata
1740
tttccctgtg ctccttttac tcaacccctg gggtatctaa tcttgccagg tcttggccag
1800
ttgagattct gttccacctg cctgcctggc cctttcctcc attaccatcc agactgctcg
1860
cctcctgggg attctcaggg gctccattat ggcttgattt actccacgtg cagaagtctt
1920
gagtggacct aggaggtagg tgggatattt tttttcacta ggatacagct catgccaacc
1980
catcctaagt gagttcagaa tcagggtatc ttgccctata agataaacag tcaaaatgcc
2040
accgagctgt tcattagtga tgtgtggcaa atcaaatcaa ctgttgaaga aggggtgagt
2100
tttctgtgct acaagcacct gtcactgttg gtacttgcag gaggcttctg ctgggtatgt
2160
tttggaagtg agtgtcacta cttggctttg cttagcaggt tctgcttcac acttgttctt
2220
tgacctgctg acttgtgact tgcagaaaca taggcagtag tcctagcctg gtaaagaccc
2280
tccaccaccc ctataagttt gattgctatg caggtttggg agaggaggcc tattgggctc
2340
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ttggatggaa cccttttcccg tattaaacaa accagagaca gaatcagtgc tgactcagga
2400
tctcctggtt tggaatcgta atgtgcctca atcctctttc caagcaggcc tcaccagtct
2460
ctttctcttt cctgcttcac ccctgcaatg agccagaac caacactaca tccacctaga
2520
actgcagaag ggcttgtggt ttcaaccaag acccatcctg agcaagggac ttggcttggt
2580
gcttttgatc ccaaagttcc cacaccggca gtggcctgct ggggcaatgg catctgtcac
2640
ggtgtttttct ccagcaggtg gagattatgg aacctacata tgggtctgga aaaactgtac
2700
actgttgtca ccttgaccat taaaaaccag aatgaggaca aaaaaaaaaa aaaaaa
2756

<210> 4632
<211> 372
<212> PRT
<213> Homo sapiens

<400> 4632
Met Ala Ala Glu Arg Gln Glu Ala Leu Arg Glu Phe Val Ala Val Thr
1   5   10   15
Gly Ala Glu Glu Asp Arg Ala Arg Phe Phe Leu Glu Ser Ala Gly Trp
                20   25   30
Asp Leu Gln Ile Ala Leu Ala Ser Phe Tyr Glu Asp Gly Gly Asp Glu
            35   40   45
Asp Ile Val Thr Ile Ser Gln Ala Thr Pro Ser Ser Val Ser Arg Gly
        50   55   60
Thr Ala Pro Ser Asp Asn Arg Val Thr Ser Phe Arg Asp Leu Ile His
65   70   75   80
Asp Gln Asp Glu Asp Glu Glu Glu Glu Glu Gly Gln Arg Ser Arg Phe
                    85   90   95
Tyr Ala Gly Gly Ser Glu Arg Ser Gly Gln Gln Ile Val Gly Pro Pro
            100   105   110
Arg Lys Lys Ser Pro Asn Glu Leu Val Asp Asp Leu Phe Lys Gly Ala
        115   120   125
Lys Glu His Gly Ala Val Ala Val Glu Arg Val Thr Lys Ser Pro Gly
    130   135   140
Glu Thr Ser Lys Pro Arg Pro Phe Ala Gly Gly Gly Tyr Arg Leu Gly
145   150   155   160
Ala Ala Pro Glu Glu Glu Ser Ala Tyr Val Ala Gly Glu Lys Arg Gln
                165   170   175
His Ser Ser Gln Asp Val His Val Val Leu Lys Leu Trp Lys Ser Gly
            180   185   190
Phe Ser Leu Asp Asn Gly Glu Leu Arg Ser Tyr Gln Asp Pro Ser Asn
        195   200   205
Ala Gln Phe Leu Glu Ser Ile Arg Arg Gly Glu Val Pro Ala Glu Leu
    210   215   220
Arg Arg Leu Ala His Gly Gly Gln Val Asn Leu Asp Met Glu Asp His
225   230   235   240
Arg Asp Glu Asp Phe Val Lys Pro Lys Gly Ala Phe Lys Ala Phe Thr
                245   250   255
Gly Glu Gly Gln Lys Leu Gly Ser Thr Ala Pro Gln Val Leu Ser Thr

3830

```
            260              265              270
Ser Ser Pro Ala Gln Gln Ala Glu Asn Glu Ala Lys Ala Ser Ser Ser
        275              280              285
Ile Leu Ile Asp Glu Ser Glu Pro Thr Thr Asn Ile Gln Ile Arg Leu
        290              295              300
Ala Asp Gly Gly Arg Leu Val Gln Lys Phe Asn His Ser His Arg Ile
305              310              315              320
Ser Asp Ile Arg Leu Phe Ile Val Asp Ala Arg Pro Ala Met Ala Ala
            325              330              335
Thr Ser Phe Ile Leu Met Thr Thr Phe Pro Asn Lys Glu Leu Ala Asp
            340              345              350
Glu Ser Gln Thr Leu Lys Glu Ala Asn Leu Leu Asn Ala Val Ile Val
        355              360              365
Gln Arg Leu Thr
        370
```

<210> 4633
<211> 873
<212> DNA
<213> Homo sapiens

<400> 4633
aagcttgagg gactgaatgg tttcttgcaa agacttctgt accttcttgg gaatctgctc
60
ccaggagctg agcaagtgct ccagcagaag gctggactgt gacaggtgct tagggtacag
120
ctgcctccag acgctggcac tgaggggtc caccgtcagg cactcagtca ggctgctcag
180
gagctctttc ttcatctcag ggggacagct aggggtggct ctggacagga aagaagggaa
240
gtaggtatgc agggtggaat ccggctttgc tccaaatgcc agcactttca gtcggggta
300
gagctgacac agctgctcct gcaggctggg tgtcagggag ttgttcggca tataggcaaa
360
gtccagaagt gggaagaagt ccttggggcc aatcatgccg aagcccttgg taaggttggg
420
atgcatcagg agcagccgat ccaggtatgt gatggcaaag ggagacagag acttgatgcc
480
cagcacaggc agcatgatcc ccagccacac tttcagtccc tcggtgaggt tggcaaaacc
540
tgcttgaccc agggcccaca tgatggtgag acactttgct ggtcggctct ggtgggacct
600
cagcagttcc aggaacttgc ctaggtttgc cgtggcaatc ttgggcttgt cttgcaggat
660
ggcctggata cagatgcggt aaccatgtag tgactcccct ggtgtcttat ccagctcttg
720
caacatggtg aacagacagt gggccctggg tcaagcaggt tttgccaacc tcactgaggg
780
actgaaagtg tggctgggga tcatgctgcc tgtgctgggc atcaagtctc tgtctccctt
840
tgccatcacc cccttcacgc ggtcggagag agc
873

<210> 4634
```

<211> 242
<212> PRT
<213> Homo sapiens

<400> 4634
```
Met Leu Gln Glu Leu Asp Lys Thr Pro Gly Glu Ser Leu His Gly Tyr
1               5                   10                  15
Arg Ile Cys Ile Gln Ala Ile Leu Gln Asp Lys Pro Lys Ile Ala Thr
            20                  25                  30
Ala Asn Leu Gly Lys Phe Leu Glu Leu Leu Arg Ser His Gln Ser Arg
        35                  40                  45
Pro Ala Lys Cys Leu Thr Ile Met Trp Ala Leu Gly Gln Ala Gly Phe
    50                  55                  60
Ala Asn Leu Thr Glu Gly Leu Lys Val Trp Leu Gly Ile Met Leu Pro
65                  70                  75                  80
Val Leu Gly Ile Lys Ser Leu Ser Pro Phe Ala Ile Thr Tyr Leu Asp
                85                  90                  95
Arg Leu Leu Leu Met His Pro Asn Leu Thr Lys Gly Phe Gly Met Ile
            100                 105                 110
Gly Pro Lys Asp Phe Phe Pro Leu Leu Asp Phe Ala Tyr Met Pro Asn
            115                 120                 125
Asn Ser Leu Thr Pro Ser Leu Gln Glu Gln Leu Cys Gln Leu Tyr Pro
        130                 135                 140
Arg Leu Lys Val Leu Ala Phe Gly Ala Lys Pro Asp Ser Thr Leu His
145                 150                 155                 160
Thr Tyr Phe Pro Ser Phe Leu Ser Arg Ala Thr Pro Ser Cys Pro Pro
                165                 170                 175
Glu Met Lys Lys Glu Leu Leu Ser Ser Leu Thr Glu Cys Leu Thr Val
            180                 185                 190
Asp Pro Leu Ser Ala Ser Val Trp Arg Gln Leu Tyr Pro Lys His Leu
            195                 200                 205
Ser Gln Ser Ser Leu Leu Leu Glu His Leu Leu Ser Ser Trp Glu Gln
    210                 215                 220
Ile Pro Lys Lys Val Gln Lys Ser Leu Gln Glu Thr Ile Gln Ser Leu
225                 230                 235                 240
Lys Leu
```

<210> 4635
<211> 384
<212> DNA
<213> Homo sapiens

<400> 4635
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acgcgtgaag ggtgatgtta ggaggaccag tgtgcagcta tgagctagga ggctgcccag
60
ttacaagagt cctgggtcag cccagaaagc ttttctccat tggttggggg aaggaggtga
120
agtggggccc gaggaggaag gccggtggtg tgtgggcaga gccagccagt ggtggccttc
180
ctcctcccga agatgagttt tgtagcccag gtgtttgcac actcacactt gctcactccc
240
tcacacacaa aaccctcact ctttgctttt tctggggaga gggaggccac tggcagaagc
300
```

```
gcctaccctg gccacagtca gttcccattc tcattttcta agaattttat cacaaaacag
360
tttgtcttga ggctgagatg gggg
384
```

<210> 4636
<211> 108
<212> PRT
<213> Homo sapiens

<400> 4636

Met	Leu	Gly	Gly	Pro	Val	Cys	Ser	Tyr	Glu	Leu	Gly	Gly	Cys	Pro	Val
1				5					10					15

Met Leu Gly Gly Pro Val Cys Ser Tyr Glu Leu Gly Gly Cys Pro Val
1   5   10   15
Thr Arg Val Leu Gly Gln Pro Arg Lys Leu Phe Ser Ile Gly Trp Gly
            20   25   30
Lys Glu Val Lys Trp Gly Pro Arg Arg Lys Ala Gly Gly Val Trp Ala
        35   40   45
Glu Pro Ala Ser Gly Gly Leu Pro Pro Pro Glu Asp Glu Phe Cys Ser
    50   55   60
Pro Gly Val Cys Thr Leu Thr Leu Ala His Ser Leu Thr His Lys Thr
65   70   75   80
Leu Thr Leu Cys Phe Phe Trp Gly Glu Gly Gly His Trp Gln Lys Arg
                85   90   95
Leu Pro Trp Pro Gln Ser Val Pro Ile Leu Ile Phe
                100   105

<210> 4637
<211> 2162
<212> DNA
<213> Homo sapiens

<400> 4637

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nnggcgcggg cgggctgctg aggtggctgt cgccggctcc gagctgcggc ttcccgggcc
60
gagcccccga tggaggccga ggccgcggac gctcccccgg gcggggttga gtcggcgctc
120
agctgcttct ctttcaacca ggactgcaca tccctagcaa ttggaactaa agccgggtat
180
aagctgtttt ctctgagttc tgtggagcag ctggatcaag tccacggaag caatgaaatc
240
ccggacgtct acatcgtgga gcgcctcttc tccagcagcc tggtggtggt agtcagtcac
300
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360
agctactcca gcaacatctt gtccataagg ctgaaccggc aaaggctgct ggtttgccta
420
gaagagtcca tttatattca caacattaaa gacatgaagc tgttgaagac cctcctggat
480
attcctgcaa acccaacagg tctatgtgct ctctctatca accattccaa ttcttacctg
540
gcctatcctg gaagcctgac ttcaggggag attgtgcttt atgatggaaa ctccctgaaa
600
acagtctgca ctattgctgc ccatgaggga acactagctg ccatcacctt caatgcctca
660
```

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ggctccaaac tagcaagtgc gtctgaaaaa ggcacagtca tccgggtgtt ctctgtccct
720
gatgggcaaa agctctatga gttccggaga gggatgaaaa ggtatgtgac aatcagctct
780
ctagtgttca gtatggattc acaattcctc tgcgcctcca gtaacaccga gacggtacac
840
atcttcaagc tggaacaggt caccaacagt cgaccagaag agccttcgac ctggagtggc
900
tacatgggaa agatgtttat ggctgctacc aactacctcc ctacccaggt gtcagacatg
960
atgcatcagg acagggcttt tgccactgca cgcttgaact tctccggaca gaggaacatc
1020
tgtaccctct caacgatcca gaagttgcca cggctgctag ttgcgtcatc cagtggacac
1080
ctttatatgt acaatttgga tcctcaggat ggaggagagt gtgtcttaat caaaacccac
1140
agcttgcttg gctcaggaac aacagaagag aataaagaaa atgacctcag accttcctta
1200
cctcagtctt atgcagcgac cgtagccaga ccaagtgcat cttcagcctc cacggtgcca
1260
ggttattctg aggacggcgg ggcgctgcga ggagaagtta ttcctgaaca tgagtttgcg
1320
acgggaccag tgtgtcttga tgatgagaat gagtttcctc ctataatctt gtgccgtgga
1380
aatcagaagg gcaaaacgaa gcagtcatga tgagaagcac acctcagaaa tcaggacatc
1440
cccctatca ggtggttttg gagaaaacaa ggaaggcgga agaatggagt gcaattgtgt
1500
gagcagaaag gggggcagga atcccgggtg ctccactgct taaaccacag gacctggtta
1560
actcctcacc aagcttccca cgaccctggt tgccaatggg cgcgggagac attgtataca
1620
catcatgcta tttaaaatac gttcaaacta tagtgtaaat gctaattaac catattggta
1680
tataaccgga attttatatt aaaaggggcc tcctttttaa atatatgccg tgtaaaaaat
1740
gtacttatag gaacatctct ttgaattgta tttcttgtat attacatact tagagagaga
1800
ctcttttagc caggcaaagt cttttttggc tgtggctgga ataaatcatt tattacttgg
1860
gagtcccatt ttggacacta ataataaaat catggcaatg cattttgag gtttttatat
1920
atttttttgt ttccttgtgg ttataggggga caggaggaac tctttaactt cttttaaatg
1980
cagtcatttc acccttaaaa ggagaggaag gggattgggc cacagactta tccatggact
2040
cgtctgctct gagatctgga aaacgaccta actttggtct aaatctgtgc tcctcaaggc
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attgtttgat agaaatgtag gatttcagga tctactcgag ccctactgag acggaatccg
2160
ga
2162
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    <210> 4638

<211> 446
<212> PRT
<213> Homo sapiens

<400> 4638
Met Glu Ala Glu Ala Ala Asp Ala Pro Pro Gly Gly Val Glu Ser Ala
 1   5   10   15
Leu Ser Cys Phe Ser Phe Asn Gln Asp Cys Thr Ser Leu Ala Ile Gly
            20   25   30
Thr Lys Ala Gly Tyr Lys Leu Phe Ser Leu Ser Ser Val Glu Gln Leu
        35   40   45
Asp Gln Val His Gly Ser Asn Glu Ile Pro Asp Val Tyr Ile Val Glu
    50   55   60
Arg Leu Phe Ser Ser Ser Leu Val Val Val Ser His Thr Lys Pro
65   70   75   80
Arg Gln Met Asn Val Tyr His Phe Lys Lys Gly Thr Glu Ile Cys Asn
                85   90   95
Tyr Ser Tyr Ser Ser Asn Ile Leu Ser Ile Arg Leu Asn Arg Gln Arg
            100   105   110
Leu Leu Val Cys Leu Glu Glu Ser Ile Tyr Ile His Asn Ile Lys Asp
        115   120   125
Met Lys Leu Leu Lys Thr Leu Leu Asp Ile Pro Ala Asn Pro Thr Gly
    130   135   140
Leu Cys Ala Leu Ser Ile Asn His Ser Asn Ser Tyr Leu Ala Tyr Pro
145   150   155   160
Gly Ser Leu Thr Ser Gly Glu Ile Val Leu Tyr Asp Gly Asn Ser Leu
            165   170   175
Lys Thr Val Cys Thr Ile Ala Ala His Glu Gly Thr Leu Ala Ala Ile
        180   185   190
Thr Phe Asn Ala Ser Gly Ser Lys Leu Ala Ser Ala Ser Glu Lys Gly
        195   200   205
Thr Val Ile Arg Val Phe Ser Val Pro Asp Gly Gln Lys Leu Tyr Glu
    210   215   220
Phe Arg Arg Gly Met Lys Arg Tyr Val Thr Ile Ser Ser Leu Val Phe
225   230   235   240
Ser Met Asp Ser Gln Phe Leu Cys Ala Ser Ser Asn Thr Glu Thr Val
            245   250   255
His Ile Phe Lys Leu Glu Gln Val Thr Asn Ser Arg Pro Glu Glu Pro
        260   265   270
Ser Thr Trp Ser Gly Tyr Met Gly Lys Met Phe Met Ala Ala Thr Asn
    275   280   285
Tyr Leu Pro Thr Gln Val Ser Asp Met Met His Gln Asp Arg Ala Phe
    290   295   300
Ala Thr Ala Arg Leu Asn Phe Ser Gly Gln Arg Asn Ile Cys Thr Leu
305   310   315   320
Ser Thr Ile Gln Lys Leu Pro Arg Leu Leu Val Ala Ser Ser Ser Gly
            325   330   335
His Leu Tyr Met Tyr Asn Leu Asp Pro Gln Asp Gly Gly Glu Cys Val
            340   345   350
Leu Ile Lys Thr His Ser Leu Leu Gly Ser Gly Thr Thr Glu Glu Asn
        355   360   365
Lys Glu Asn Asp Leu Arg Pro Ser Leu Pro Gln Ser Tyr Ala Ala Thr
    370   375   380
Val Ala Arg Pro Ser Ala Ser Ser Ala Ser Thr Val Pro Gly Tyr Ser

```
385                      390                 395                 400
Glu Asp Gly Gly Ala Leu Arg Gly Glu Val Ile Pro Glu His Glu Phe
                     405                 410                 415
Ala Thr Gly Pro Val Cys Leu Asp Asp Glu Asn Glu Phe Pro Pro Ile
             420                 425                 430
Ile Leu Cys Arg Gly Asn Gln Lys Gly Lys Thr Lys Gln Ser
         435                 440                 445
```

<210> 4639
<211> 1007
<212> DNA
<213> Homo sapiens

<400> 4639

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nntttttttt aaaacaaaac attttattta atgcagaaat tctaaggtac aaaaacattt
60
tgtaaatgtc agctgtgatc tactttcacc tagttacaga gttatgtaca aatcaagtca
120
ttaacatttt caatgtcaaa aatacagcac gctgttaaga gttctgtcag tgctcattat
180
cccactagat cccacaaagg gcaaactcaa agatgaaaca aaggcaacgc catcaataac
240
caccatattc cacaggcttt ctcccctagg acgtactaac agggagtttc cacagggaaa
300
aattctcttt taaaaaatta acagtaaaaa taggagttac ttactatcta gatgaacaca
360
attggttttc acaaaagctt ttgctgctgt ctggactcac catgcttttt tcttgagaga
420
aacataccaa actttttgtt gttgttgttg agacggagtt tcgctcttgt tgcccaggct
480
agagtgcaat ggcgtgatct cagctcactg caacctccgc ctcccaggct caagcgattc
540
tcccacctca gcctcccaag tagctaggac tacaggtgtg tgccaccaca cccagctaat
600
tttnnctgta gagacggtnn ttcaccatgt tgcccagact ggtctcaaat tcctgggctc
660
aagcaatcta accccttgg cctcccaaag tgctgggata acaggtgtga gccaccatac
720
ccagctacaa agactctttt cccacataag gtcacattca cagggtccaa gtagacatct
780
cttttcaggg gaccacagtt caacccacta caactaagca gtgccacact tttcttcagg
840
tgggtgtggc ttattggatg tttcattttt aggtgacctt ggccccttgc tgaagaaggg
900
atagacccat gccctctgca gaagggctga ggtttaggca aggccaattc cttcccctgt
960
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1007
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<210> 4640
<211> 71
<212> PRT
<213> Homo sapiens

<400> 4640
Met Asn Thr Ile Gly Phe His Lys Ser Phe Cys Cys Cys Leu Asp Ser
1   5   10   15
Pro Cys Phe Phe Leu Glu Arg Asn Ile Pro Asn Phe Leu Leu Leu Leu
            20   25   30
Leu Arg Arg Ser Phe Ala Leu Val Ala Gln Ala Arg Val Gln Trp Arg
        35   40   45
Asp Leu Ser Ser Leu Gln Pro Pro Pro Pro Arg Leu Lys Arg Phe Ser
    50   55   60
His Leu Ser Leu Pro Ser Ser
65   70

<210> 4641
<211> 1873
<212> DNA
<213> Homo sapiens

<400> 4641
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120
gggccgaaga aggttgagaa ggtcgacaaa gatgctgaat tagtggccca atggaactat
180
tgtactctaa gtcaggaaat attaagacga ccaatagttg cctgtgaact tggcagactt
240
tataacaaag atgccgtcat tgaatttctc ttggacaaat ctgcagaaaa ggctcttggg
300
aaggcagcat ctcacattaa aagcattaag aatgtgacag agctgaagct ttctgataat
360
cctgcctggg aaggggataa aggaaacact aaaggtgaca agcacgatga cctccagcgg
420
gcgcgtttca tctgccccgt tgtgggcctg agatgaacg gccgacacag gttctgcttc
480
cttcggtgct gcggctgtgt gttttctgag cgagccttga aagagataaa agcggaagtt
540
tgccacacgt gtggggctgc cttccaggag gatgatgtca tcatgctcaa tggcaccaag
600
gaggatgtgg acgtgctgaa gacaaggatg gaggagagaa ggctgagagc gaagctggaa
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960
cactgggtca cccacacgtc ctactgcttc tgaagcccgc actgccaccg ctcctgcccc
1020
agaaggttgt ttagtttcca cgtaggcagg tcgctttgtg cctctgagtg cgctgctgtg
1080

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tgttctctct atagttctgt gtcataaagc tgtcctggcc agccttcaag ctggtgtggc
1140
cactcttgat gtgaggcgtg tcggttccag gggggacatg ggaggggctg cacagtggcc
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1260
tgtgggctgc acttttttatg cttgcagtaa caagagactc cagagtcctc accggtgcag
1320
agttggcaca tattaattaa ctaaaattct aatgatcttg ctaccagcaa taaatcaagt
1380
aggccaagtg aaactgggct ttaaaaagga tggatttcaa atacactgtg cccactagaa
1440
gcttcgaagg gcctcgtccc tctgctacag ccctgggagg agccaggatc cttgttggtc
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1620
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1680
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1740
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1860
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1873
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<210> 4642
<211> 306
<212> PRT
<213> Homo sapiens
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<400> 4642
Met Gly Cys Asp Gly Gly Thr Ile Pro Lys Arg His Glu Leu Val Lys
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Gly Pro Lys Lys Val Glu Lys Val Asp Lys Asp Ala Glu Leu Val Ala
            20                 25                 30
Gln Trp Asn Tyr Cys Thr Leu Ser Gln Glu Ile Leu Arg Arg Pro Ile
         35                 40                 45
Val Ala Cys Glu Leu Gly Arg Leu Tyr Asn Lys Asp Ala Val Ile Glu
      50                 55                 60
Phe Leu Leu Asp Lys Ser Ala Glu Lys Ala Leu Gly Lys Ala Ala Ser
65                 70                 75                 80
His Ile Lys Ser Ile Lys Asn Val Thr Glu Leu Lys Leu Ser Asp Asn
                  85                 90                 95
Pro Ala Trp Glu Gly Asp Lys Gly Asn Thr Lys Gly Asp Lys His Asp
            100                105                110
Asp Leu Gln Arg Ala Arg Phe Ile Cys Pro Val Val Gly Leu Glu Met
            115                120                125
Asn Gly Arg His Arg Phe Cys Phe Leu Arg Cys Cys Gly Cys Val Phe
      130                135                140
Ser Glu Arg Ala Leu Lys Glu Ile Lys Ala Glu Val Cys His Thr Cys
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145                 150                 155                 160
Gly Ala Ala Phe Gln Glu Asp Asp Val Ile Met Leu Asn Gly Thr Lys
                165                 170                 175
Glu Asp Val Asp Val Leu Lys Thr Arg Met Glu Glu Arg Arg Leu Arg
                180                 185                 190
Ala Lys Leu Glu Lys Lys Thr Lys Lys Pro Lys Ala Ala Glu Ser Val
        195                 200                 205
Ser Lys Pro Asp Val Ser Glu Glu Ala Pro Gly Pro Ser Lys Val Lys
        210                 215                 220
Thr Gly Lys Pro Glu Glu Ala Ser Leu Asp Ser Arg Glu Lys Lys Thr
225                 230                 235                 240
Asn Leu Ala Pro Lys Ser Thr Ala Met Asn Glu Ser Ser Ser Gly Lys
                245                 250                 255
Ala Gly Lys Pro Pro Cys Gly Ala Thr Lys Arg Ser Ile Ala Asp Ser
                260                 265                 270
Glu Glu Ser Glu Ala Tyr Lys Ser Leu Phe Thr Thr His Ser Ser Ala
        275                 280                 285
Lys Arg Ser Lys Glu Glu Ser Ala His Trp Val Thr His Thr Ser Tyr
        290                 295                 300
Cys Phe
305


<210> 4643
<211> 1125
<212> DNA
<213> Homo sapiens

<400> 4643
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120
acgggaacgc gctatgccgg gaaggtggtg gtcgtgaccg ggggcgggcg cggcatcgga
180
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240
gagtctgggg gccgggccct ggagcaggag ctccctggag ctgtctttat cctctgtgat
300
gtgactcagg aagatgatat gaagaccctg gtttctgaga ccatccgccg atttggccgc
360
ctggattgtg ttgtcaacaa cgctggccac cacccacccc cacagaggcc tgaggagacc
420
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480
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540
gtgggggcaa tcggccaggc ccaggcagtt ccctatgtgg ccaccaaggg ggcagtaaca
600
gccatgacca aagctttggc cctggatgaa agtccatatg tgtccgagt caactgtatc
660
tccccaggaa acatctggac cccgctgtgg gaggagctgg cagccttaat gccagaccct
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780
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900
gtggacgccc ccgatatccc ttcctgattt ctctcatttc tacttggggc cccttccta
960
ggactctccc accccaaact ccaacctgta tcagatgcag cccccaagcc cttagactct
1020
aagcccagtt agcaaggtgc cgggtcaccc tgcaggttcc cataaaaacg atttgcagcc
1080
agaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaa
1125

<210> 4644
<211> 270
<212> PRT
<213> Homo sapiens

<400> 4644
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Gly Gly Arg Gly Ile Gly Ala Gly Ile Val Arg Ala Phe Val Asp Ser
            20   25   30
Gly Ala Arg Val Val Ile Cys Asp Lys Asp Glu Ser Gly Gly Arg Ala
        35   40   45
Leu Glu Gln Glu Leu Pro Gly Ala Val Phe Ile Leu Cys Asp Val Thr
    50   55   60
Gln Glu Asp Asp Met Lys Thr Leu Val Ser Glu Thr Ile Arg Arg Phe
65   70   75   80
Gly Arg Leu Asp Cys Val Val Asn Asn Ala Gly His His Pro Pro Pro
                85   90   95
Gln Arg Pro Glu Glu Thr Ser Ala Gln Gly Phe Arg Gln Leu Leu Glu
            100   105   110
Leu Asn Leu Leu Gly Thr Tyr Thr Leu Thr Lys Leu Ala Leu Pro Tyr
        115   120   125
Leu Arg Lys Ser Gln Gly Asn Val Ile Asn Ile Ser Ser Leu Val Gly
    130   135   140
Ala Ile Gly Gln Ala Gln Ala Val Pro Tyr Val Ala Thr Lys Gly Ala
145   150   155   160
Val Thr Ala Met Thr Lys Ala Leu Ala Leu Asp Glu Ser Pro Tyr Gly
                165   170   175
Val Arg Val Asn Cys Ile Ser Pro Gly Asn Ile Trp Thr Pro Leu Trp
            180   185   190
Glu Glu Leu Ala Ala Leu Met Pro Asp Pro Arg Ala Thr Ile Arg Glu
        195   200   205
Gly Met Leu Ala Gln Pro Leu Gly Arg Met Gly Gln Pro Ala Glu Val
    210   215   220
Gly Ala Ala Ala Val Phe Leu Ala Ser Glu Ala Asn Phe Cys Thr Gly
225   230   235   240
Ile Glu Leu Leu Val Thr Gly Gly Ala Glu Leu Gly Tyr Gly Cys Lys
                245   250   255
Ala Ser Arg Ser Thr Pro Val Asp Ala Pro Asp Ile Pro Ser
            260   265   270

<210> 4645
<211> 1725
<212> DNA
<213> Homo sapiens

<400> 4645
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120
tgtgaggcgg cctcacaggg ccgggtgggc tggcgagccg acgcggcggc ggaggaggct
180
gtgaggagtg tgtggaacag gacccgggac agaggaacca tggctccgca gaacctgagc
240
accttttgcc tgttgctgct atacctcatc ggggcggtga ttgccggacg agatttctat
300
aagatcttgg gggtgcctcg aagtgcctct ataaaggata ttaaaaaggc ctataggaaa
360
ctagccctgc agcttcatcc cgaccggaac cctgatgatc cacaagccca ggagaaattc
420
caggatctgg gtgctgctta tgaggttctg tcagatagtg agaaacggaa acagtacgat
480
acttatggtg aagaaggatt aaaagatggt catcagagct cccatggaga cattttttca
540
cacttctttg gggattttgg tttcatgttt ggaggaaccc ctcgtcagca agacagaaat
600
attccaagag gaagtgatat tattgtagat ctagaagtca ctttggaaga agtatatgca
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ggaaattttg tggaagtagt tagaaacaaa cctgtggcaa ggcaggctcc tggcaaacgg
720
aagtgcaatt gtcggcaaga gatgcggacc acccagctgg ccctgggcg cttccaaatg
780
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840
ctggaagtag aaatagagcc tggggtgaga gacggcatgg agtacccctt tattggagaa
900
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1020
gagtcactgg ttggctttga gatggatatt actcacttgg atggtcacaa ggtacatatt
1080
tcccgggata agatcaccag gccaggagcg aagctatgga agaaagggga agggctcccc
1140
aactttgaca acaacaatat caagggctct ttgataatca cttttgatgt ggattttcca
1200
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gtgcagaagg tatacaatgg actgcaagga tattgagagt gaataaaatt ggactttgtt
1320
taaaataagt gaataagcga tatttattat ctgcaaggtt tttttgtgtg tgtttttgtt
1380
tttattttca atatgcaagt taggcttaat tttttatct aatgatcatc atgaaatgaa
1440

taagagggct taagaatttg tccatttgca ttcggaaaag aatgaccagc aaaaggttta
1500
ctaataccto tcccttgggg gatttaatgt ctggtgctgc cgcctgagtt tcaagaatta
1560
aagctgcaag aggactccag gagcaaaaga aacacaatat agagggttgg agttgttagc
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1680
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1725

<210> 4646
<211> 358
<212> PRT
<213> Homo sapiens

<400> 4646
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1   5   10   15
Ile Gly Ala Val Ile Ala Gly Arg Asp Phe Tyr Lys Ile Leu Gly Val
            20   25   30
Pro Arg Ser Ala Ser Ile Lys Asp Ile Lys Lys Ala Tyr Arg Lys Leu
        35   40   45
Ala Leu Gln Leu His Pro Asp Arg Asn Pro Asp Asp Pro Gln Ala Gln
    50   55   60
Glu Lys Phe Gln Asp Leu Gly Ala Ala Tyr Glu Val Leu Ser Asp Ser
65   70   75   80
Glu Lys Arg Lys Gln Tyr Asp Thr Tyr Gly Glu Glu Gly Leu Lys Asp
                85   90   95
Gly His Gln Ser Ser His Gly Asp Ile Phe Ser His Phe Phe Gly Asp
            100   105   110
Phe Gly Phe Met Phe Gly Gly Thr Pro Arg Gln Gln Asp Arg Asn Ile
        115   120   125
Pro Arg Gly Ser Asp Ile Ile Val Asp Leu Glu Val Thr Leu Glu Glu
    130   135   140
Val Tyr Ala Gly Asn Phe Val Glu Val Val Arg Asn Lys Pro Val Ala
145   150   155   160
Arg Gln Ala Pro Gly Lys Arg Lys Cys Asn Cys Arg Gln Glu Met Arg
                165   170   175
Thr Thr Gln Leu Gly Pro Gly Arg Phe Gln Met Thr Gln Glu Val Val
            180   185   190
Cys Asp Glu Cys Pro Asn Val Lys Leu Val Asn Glu Glu Arg Thr Leu
        195   200   205
Glu Val Glu Ile Glu Pro Gly Val Arg Asp Gly Met Glu Tyr Pro Phe
    210   215   220
Ile Gly Glu Gly Glu Pro His Val Asp Gly Glu Pro Gly Asp Leu Arg
225   230   235   240
Phe Arg Ile Lys Val Val Lys His Pro Ile Phe Glu Arg Arg Gly Asp
                245   250   255
Asp Leu Tyr Thr Asn Val Thr Ile Ser Leu Val Glu Ser Leu Val Gly
            260   265   270
Phe Glu Met Asp Ile Thr His Leu Asp Gly His Lys Val His Ile Ser
        275   280   285
Arg Asp Lys Ile Thr Arg Pro Gly Ala Lys Leu Trp Lys Lys Gly Glu

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            290                    295                    300
Gly Leu Pro Asn Phe Asp Asn Asn Asn Ile Lys Gly Ser Leu Ile Ile
305                    310                    315                    320
Thr Phe Asp Val Asp Phe Pro Lys Glu Gln Leu Thr Glu Glu Ala Arg
                325                    330                    335
Glu Gly Ile Lys Gln Leu Leu Lys Gln Gly Ser Val Gln Lys Val Tyr
                340                    345                    350
Asn Gly Leu Gln Gly Tyr
            355


<210> 4647
<211> 791
<212> DNA
<213> Homo sapiens


<400> 4647
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120
gatccccctg gaggaggcac cagcatcacc aagtaggtgc cacaggtata tatgggtgtc
180
ttccgcagca tttttagagg cagcccacag ctagtatttg ctgcttgatc ctctttcagt
240
gtgttggaga tggtggaacc agtcagggca gcaagcgttg ctgacgggga ggctctatac
300
cgagaaagtc tacttagaag catctcatta atgcttttgg cagattcgcc ctctttctc
360
attagaattg tacgttcctg aagtgggttg gctacaaata caccattttc aaccacaagt
420
tcaaaaatgt ccatgaagac agaatgtccc ttcggtgttt tctcattcag gctggcagga
480
gaccagatcc aatagaagta agtgccatct gaagacaggt gcacagtgct catggtgctg
540
ccaatgggga ggtgattggc tggcattggc accacctggc acacctgaag ggtgttctgg
600
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660
ctgccgctgc caaaagccac ccatcctggt tccaactcct cgttccggca gtacacaaaa
720
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780
gtagtataca g
791


<210> 4648
<211> 188
<212> PRT
<213> Homo sapiens


<400> 4648
Met Pro Ala Asn His Leu Pro Ile Gly Ser Thr Met Ser Thr Val His
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Leu Ser Ser Asp Gly Thr Tyr Phe Tyr Trp Ile Trp Ser Pro Ala Ser
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                    20                    25                    30
  Leu Asn Glu Lys Thr Pro Lys Gly His Ser Val Phe Met Asp Ile Phe
          35                    40                    45
  Glu Leu Val Val Glu Asn Gly Val Phe Val Ala Asn Pro Leu Gln Glu
      50                    55                    60
  Arg Thr Ile Leu Met Arg Lys Glu Gly Glu Ser Ala Lys Ser Ile Asn
  65                    70                    75                    80
  Glu Met Leu Leu Ser Arg Leu Ser Arg Tyr Arg Ala Ser Pro Ser Ala
                  85                    90                    95
  Thr Leu Ala Ala Leu Thr Gly Ser Thr Ile Ser Asn Thr Leu Lys Glu
                  100                   105                   110
  Asp Gln Ala Ala Asn Thr Ser Cys Gly Leu Pro Leu Lys Met Leu Arg
              115                   120                   125
  Lys Thr Pro Ile Tyr Thr Cys Gly Thr Tyr Leu Val Met Leu Val Pro
          130                   135                   140
  Pro Pro Gly Gly Ser Gly Ser Ser Ala Thr Arg Ser Leu Phe Gly Gly
  145                   150                   155                   160
  Thr Ser Gly Leu Ser Ser Leu Lys Ile Leu Ala Ser Ser Leu Val Tyr
                  165                   170                   175
  Asn Ile Ser Asp Gly Gln Phe Thr Ser Arg Ala Asp
                  180                   185
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<210> 4649
<211> 3276
<212> DNA
<213> Homo sapiens

<400> 4649
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180
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240
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300
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360
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420
gccgtgaagg tctgtctcct caacttcatg atcaccccct gggtctcca agatcaactc
480
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540
gtggaaagtg ccaagaacaa gaagcatctc aaggaaattg aagataagat cttggaggtt
600
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660
tccaaagtgc tatctgaaga gatctcagag aaacagaaag ttgcttccat gacagaaacg
720
cagattgacg agactcggat gggctacaag ccagtggctg tgcattctgc caccatcttc
780
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ttttgtatct cggacctggc caacatcgag ccgatgtacc agtactccct gacttggttc
840
ataaatctct acatgcattc cttgacccac agcacgaaga gcgaggaact gaatctgcgc
900
atcaagtaca tcattgacca tttcaccctg agcatctaca acaacgtgtg ccgttctctg
960
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1020
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1200
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1320
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1620
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1740
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1920
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2220
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2280
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2340
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2400
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2460
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2520
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2580
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2700
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2760
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2880
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3060
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3120
accaactatg tcctctccat tgagcttcca acagacatgc cccagaagca ctggataaac
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3276
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<210> 4650
<211> 965
<212> PRT
<213> Homo sapiens

<400> 4650
Val Glu Tyr Met Arg Leu Gly Glu Asn Ile Ile Glu Tyr Ser Arg Asp
1               5                   10                  15
Phe Lys Leu Tyr Ile Thr Thr Arg Leu Arg Asn Pro His Tyr Leu Pro
            20                  25                  30
Glu Val Ala Val Lys Val Cys Leu Leu Asn Phe Met Ile Thr Pro Leu
        35                  40                  45
Gly Leu Gln Asp Gln Leu Leu Gly Ile Val Ala Ala Lys Glu Lys Pro
    50                  55                  60
Glu Leu Glu Glu Lys Lys Asn Gln Leu Ile Val Glu Ser Ala Lys Asn
65                  70                  75                  80
Lys Lys His Leu Lys Glu Ile Glu Asp Lys Ile Leu Glu Val Leu Ser
            85                  90                  95
Met Ser Lys Gly Asn Ile Leu Glu Asp Glu Thr Ala Ile Lys Val Leu
            100                 105                 110
Ser Ser Ser Lys Val Leu Ser Glu Glu Ile Ser Glu Lys Gln Lys Val
        115                 120                 125
Ala Ser Met Thr Glu Thr Gln Ile Asp Glu Thr Arg Met Gly Tyr Lys
```

```
            130                     135                     140
Pro Val Ala Val His Ser Ala Thr Ile Phe Phe Cys Ile Ser Asp Leu
145                     150                     155                     160
Ala Asn Ile Glu Pro Met Tyr Gln Tyr Ser Leu Thr Trp Phe Ile Asn
                165                     170                     175
Leu Tyr Met His Ser Leu Thr His Ser Thr Lys Ser Glu Glu Leu Asn
                180                     185                     190
Leu Arg Ile Lys Tyr Ile Ile Asp His Phe Thr Leu Ser Ile Tyr Asn
        195                     200                     205
Asn Val Cys Arg Ser Leu Phe Glu Lys Asp Lys Leu Leu Phe Ser Leu
        210                     215                     220
Leu Leu Thr Ile Gly Ile Met Lys Gln Lys Lys Glu Ile Thr Glu Glu
225                     230                     235                     240
Val Trp Tyr Phe Leu Leu Thr Gly Gly Ile Ala Leu Asp Asn Pro Tyr
                245                     250                     255
Pro Asn Pro Ala Pro Gln Trp Leu Ser Glu Lys Ala Trp Ala Glu Ile
                260                     265                     270
Val Arg Ala Ser Ala Leu Pro Lys Leu His Gly Leu Met Glu His Leu
        275                     280                     285
Glu Gln Asn Leu Gly Glu Trp Lys Leu Ile Tyr Asp Ser Ala Trp Pro
        290                     295                     300
His Glu Glu Gln Leu Pro Gly Ser Trp Lys Phe Ser Gln Gly Leu Glu
305                     310                     315                     320
Lys Met Val Ile Leu Arg Cys Leu Arg—Pro Asp Lys Met Val Pro Ala
                325                     330                     335
Val Arg Glu Phe Ile Ala Glu His Met Gly Lys Leu Tyr Ile Glu Ala
                340                     345                     350
Pro Thr Phe Asp Leu Gln Gly Ser Tyr Asn Asp Ser Ser Cys Cys Ala
        355                     360                     365
Pro Leu Ile Phe Val Leu Ser Pro Ser Ala Asp Pro Met Ala Gly Leu
        370                     375                     380
Leu Lys Phe Ala Asp Asp Leu Gly Met Gly Gly Thr Arg Thr Gln Thr
385                     390                     395                     400
Ile Ser Leu Gly Gln Gly Gln Gly Pro Ile Ala Ala Lys Met Ile Asn
                405                     410                     415
Asn Ala Ile Lys Asp Gly Thr Trp Val Val Leu Gln Asn Cys His Leu
                420                     425                     430
Ala Ala Ser Trp Met Pro Thr Leu Glu Lys Ile Cys Glu Glu Val Ile
                435                     440                     445
Val Pro Glu Ser Thr Asn Ala Arg Phe Arg Leu Trp Leu Thr Ser Tyr
        450                     455                     460
Pro Ser Glu Lys Phe Pro Val Ser Ile Leu Gln Asn Gly Ile Lys Met
465                     470                     475                     480
Thr Asn Glu Pro Pro Lys Gly Leu Arg Ala Asn Leu Leu Arg Ser Tyr
                485                     490                     495
Leu Asn Asp Pro Ile Ser Asp Pro Val Phe Phe Gln Ser Cys Ala Lys
                500                     505                     510
Ala Val Met Trp Gln Lys Met Leu Phe Gly Leu Cys Phe Phe His Ala
        515                     520                     525
Val Val Gln Glu Arg Arg Asn Phe Gly Pro Leu Gly Trp Asn Ile Pro
        530                     535                     540
Tyr Glu Phe Asn Glu Ser Asp Leu Arg Ile Ser Met Trp Gln Ile Gln
545                     550                     555                     560
Met Phe Leu Asn Asp Tyr Lys Glu Val Pro Phe Asp Ala Leu Thr Tyr
```

```
                  565                   570                   575
Leu Thr Gly Glu Cys Asn Tyr Gly Gly Arg Val Thr Asp Asp Lys Asp
              580                   585                   590
Arg Arg Leu Leu Leu Ser Leu Leu Ser Met Phe Tyr Cys Lys Glu Ile
              595                   600                   605
Glu Glu Asp Tyr Tyr Ser Leu Ala Pro Gly Asp Thr Tyr Tyr Ile Pro
              610                   615                   620
Pro His Gly Ser Tyr Gln Ser Tyr Ile Asp Tyr Leu Arg Asn Leu Pro
625                   630                   635                   640
Ile Thr Ala His Pro Glu Val Phe Gly Leu His Glu Asn Ala Asp Ile
                  645                   650                   655
Thr Lys Asp Asn Gln Glu Thr Asn Gln Leu Phe Glu Gly Val Leu Leu
              660                   665                   670
Thr Leu Pro Arg Gln Ser Gly Gly Ser Gly Lys Ser Pro Gln Glu Val
              675                   680                   685
Val Glu Glu Leu Ala Gln Asp Ile Leu Ser Lys Leu Pro Arg Asp Phe
              690                   695                   700
Asp Leu Glu Glu Val Met Lys Leu Tyr Pro Val Val Tyr Glu Glu Ser
705                   710                   715                   720
Met Asn Thr Val Leu Arg Gln Glu Leu Ile Arg Phe Asn Arg Leu Thr
                  725                   730                   735
Lys Val Val Arg Arg Ser Leu Ile Asn Leu Gly Arg Ala Ile Lys Gly
              740                   745                   750
Gln Val Leu Met Ser Ser Glu Leu Glu Glu Val Phe Asn Ser Met Leu
              755                   760                   765
Val Gly Lys Val Pro Ala Met Trp Ala Ala Lys Ser Tyr Pro Ser Leu
              770                   775                   780
Lys Pro Leu Gly Gly Tyr Val Ala Asp Leu Leu Ala Arg Leu Thr Phe
785                   790                   795                   800
Phe Gln Glu Trp Ile Asp Lys Gly Pro Pro Val Val Phe Trp Ile Ser
                  805                   810                   815
Gly Phe Tyr Phe Thr Gln Ser Phe Leu Thr Gly Val Ser Gln Asn Tyr
              820                   825                   830
Ala Arg Lys Tyr Thr Ile Pro Ile Asp His Ile Gly Phe Glu Phe Glu
              835                   840                   845
Val Thr Pro Gln Glu Thr Val Met Glu Asn Asn Pro Glu Asp Gly Ala
              850                   855                   860
Tyr Ile Lys Gly Leu Phe Leu Glu Gly Ala Arg Trp Asp Arg Lys Thr
865                   870                   875                   880
Met Gln Ile Gly Glu Ser Leu Pro Lys Ile Leu Tyr Asp Pro Leu Pro
                  885                   890                   895
Ile Ile Trp Leu Lys Pro Gly Glu Ser Ala Met Phe Leu His Gln Asp
              900                   905                   910
Ile Tyr Val Cys Pro Val Tyr Lys Thr Ser Ala Arg Arg Gly Thr Leu
              915                   920                   925
Ser Thr Thr Gly His Ser Thr Asn Tyr Val Leu Ser Ile Glu Leu Pro
              930                   935                   940
Thr Asp Met Pro Gln Lys His Trp Ile Asn Arg Gly Val Ala Ser Leu
945                   950                   955                   960
Cys Gln Leu Asp Asn
                  965
```

<210> 4651
<211> 869

```
<212> DNA
<213> Homo sapiens

<400> 4651
ngggcccgca ctttccgga gtgcaccccg cggccgccag ccggggcgat ggcggggctc
60
tggctggggc tcgtgtggca gaagctgctg ctgtggggcg cggcgagtgc cgtttccctg
120
gccggcgcca gtctggtcct gagcctgctg cagagggtgg cgagctacgc gcggaaatgg
180
cagcagatgc ggcccatccc cacggtggcc cgcgcctacc cactggtggg ccacgcgctg
240
ctgatgaagc cggacgggcg agaatttttt cagcagatca ttgagtacac agaggaatac
300
cgccacatgc cgctgctgaa gctctgggtc gggccagtgc ccatggtggc cctttataat
360
gcagaaaatg tggaggtaat tttaactagt tcaaagcaaa ttgacaaatc ctctatgtac
420
aagttttag aaccatggct tggcctagga cttcttacaa gtactggaaa caaatggcgc
480
tccaggagaa agatgttaac acccactttc cattttacca ttctggaaga tttcttagat
540
atcatgaatg aacaagcaaa tatattggtt aagaaacttg aaaaacacat taaccaagaa
600
gcatttaact gcttttttta catcactctt tgtgccttag atatcatctg tgaaacagct
660
atgggaaga atattggtgc tcaaagtaat gatgattccg agtatgtccg tgcagtttat
720
agaatgagtg agatgatatt tccaagaata aagatgccct ggctttggct tgatctctgg
780
taccttatgt ttaaagaagg atgggaacac aaaaagagcc ttaagatcct acatactttt
840
acccacagtg tcatcccgga acgggccaa
869


<210> 4652
<211> 289
<212> PRT
<213> Homo sapiens

<400> 4652
Xaa Ala Arg Thr Phe Pro Glu Cys Thr Pro Arg Pro Pro Ala Gly Ala
 1               5                  10                  15
Met Ala Gly Leu Trp Leu Gly Leu Val Trp Gln Lys Leu Leu Leu Trp
             20                  25                  30
Gly Ala Ala Ser Ala Val Ser Leu Ala Gly Ala Ser Leu Val Leu Ser
             35                  40                  45
Leu Leu Gln Arg Val Ala Ser Tyr Ala Arg Lys Trp Gln Gln Met Arg
         50                  55                  60
Pro Ile Pro Thr Val Ala Arg Ala Tyr Pro Leu Val Gly His Ala Leu
65                  70                  75                  80
Leu Met Lys Pro Asp Gly Arg Glu Phe Phe Gln Gln Ile Ile Glu Tyr
                 85                  90                  95
Thr Glu Glu Tyr Arg His Met Pro Leu Leu Lys Leu Trp Val Gly Pro
```

```
                  100                   105                   110
Val Pro Met Val Ala Leu Tyr Asn Ala Glu Asn Val Glu Val Ile Leu
            115                   120                   125
Thr Ser Ser Lys Gln Ile Asp Lys Ser Ser Met Tyr Lys Phe Leu Glu
        130                   135                   140
Pro Trp Leu Gly Leu Gly Leu Leu Thr Ser Thr Gly Asn Lys Trp Arg
145                   150                   155                   160
Ser Arg Arg Lys Met Leu Thr Pro Thr Phe His Phe Thr Ile Leu Glu
                165                   170                   175
Asp Phe Leu Asp Ile Met Asn Glu Gln Ala Asn Ile Leu Val Lys Lys
                180                   185                   190
Leu Glu Lys His Ile Asn Gln Glu Ala Phe Asn Cys Phe Phe Tyr Ile
            195                   200                   205
Thr Leu Cys Ala Leu Asp Ile Ile Cys Glu Thr Ala Met Gly Lys Asn
        210                   215                   220
Ile Gly Ala Gln Ser Asn Asp Asp Ser Glu Tyr Val Arg Ala Val Tyr
225                   230                   235                   240
Arg Met Ser Glu Met Ile Phe Pro Arg Ile Lys Met Pro Trp Leu Trp
                245                   250                   255
Leu Asp Leu Trp Tyr Leu Met Phe Lys Glu Gly Trp Glu His Lys Lys
                260                   265                   270
Ser Leu Lys Ile Leu His Thr Phe Thr His Ser Val Ile Pro Glu Arg
            275                   280                   285
Ala
```

```
<210> 4653
<211> 1276
<212> DNA
<213> Homo sapiens

<400> 4653
nagcgctccc gtgggtggaa cagtgactct tcgagaagac agtgccaaga ggttggagag
60
gagggcacgc cgcatctccg catgtctgtc ggattattcg ctagccagcg acagtggggt
120
gtttgaacct ctaaccaaaa ggaacgaaga tgccgaggag cctgcctacg gagacacggc
180
cagtaacgga gatccccaga tccacgtggg actcctgcgc gacagtggca gcgagtgtct
240
cctcgtgcac gtgctgcagc tgaagaaccc ggcggggctg gcggtgaagg aagactgcaa
300
agtccacatc cgagtctatt tgcccccact tcggtggata gcggctgtag caactgcacc
360
cagaccagcc ctccgtaccc agagccctgt tgcatgggta tcgactccat cctgggccac
420
ccatttgctg ctcaggcagg gccttacagc cccgagaaat ttcagccctc gcctcttaag
480
gttgataagg aaaccaacac ggaagatctc tttctggaag aagcagccag cctcgtgaag
540
gagcggccca gccgccgggc ccgagggtcg ccttttgttc ggagtggcac gattgtccgt
600
tcccagacat tctcgcctgg agcacgaagc cagtatgttt gcagacttta tcgtagtgac
660
```

```
agcgacagtt caacgctgcc ccggaagtcc ccctttgtcc gaaatacttt ggaaagacga
720
acccttcgct ataagcagtc atgcaggtct ccctggctg agctcatggc ccgcacctcc
780
ctggacttgg agctggatct ccaggcgtcg agaacacggc agaggcagct gaatgaggag
840
ctctgcgccc tccgtgagct gcggcagcgg ttggaggacg cccagctccg tggccagact
900
gacctccac cctgggtgct tcgggacgag cggctccgtg gcctgctgcg ggaggccgag
960
cggcagacaa gacagaccaa acttgactac cgtcatgagc aggcggctga gaagatgctg
1020
aagaaggcct ccaaggagat ctaccagctg cgtgggcaga gccacaaaga gcccatccaa
1080
gtgcagacct taggagaa gatagcattc ttcacaaggc caaggatcaa catacctcct
1140
ctcccagccg acgacgtctg atggagtgca ttgtgcacat gaagtattta tccacctgtt
1200
ttattttcat gaagttctta gactagctga atttgtcttt aaaatatttg tgcaaagcta
1260
ttaatataca catttt
1276
```

```
<210> 4654
<211> 255
<212> PRT
<213> Homo sapiens
```

```
<400> 4654
Met Gly Ile Asp Ser Ile Leu Gly His Pro Phe Ala Ala Gln Ala Gly
1               5                   10                  15
Pro Tyr Ser Pro Glu Lys Phe Gln Pro Ser Pro Leu Lys Val Asp Lys
            20                  25                  30
Glu Thr Asn Thr Glu Asp Leu Phe Leu Glu Glu Ala Ala Ser Leu Val
        35                  40                  45
Lys Glu Arg Pro Ser Arg Arg Ala Arg Gly Ser Pro Phe Val Arg Ser
    50                  55                  60
Gly Thr Ile Val Arg Ser Gln Thr Phe Ser Pro Gly Ala Arg Ser Gln
65                  70                  75                  80
Tyr Val Cys Arg Leu Tyr Arg Ser Asp Ser Asp Ser Ser Thr Leu Pro
                85                  90                  95
Arg Lys Ser Pro Phe Val Arg Asn Thr Leu Glu Arg Arg Thr Leu Arg
            100                 105                 110
Tyr Lys Gln Ser Cys Arg Ser Ser Leu Ala Glu Leu Met Ala Arg Thr
        115                 120                 125
Ser Leu Asp Leu Glu Leu Asp Leu Gln Ala Ser Arg Thr Arg Gln Arg
    130                 135                 140
Gln Leu Asn Glu Glu Leu Cys Ala Leu Arg Glu Leu Arg Gln Arg Leu
145                 150                 155                 160
Glu Asp Ala Gln Leu Arg Gly Gln Thr Asp Leu Pro Pro Trp Val Leu
            165                 170                 175
Arg Asp Glu Arg Leu Arg Gly Leu Leu Arg Glu Ala Glu Arg Gln Thr
        180                 185                 190
Arg Gln Thr Lys Leu Asp Tyr Arg His Glu Gln Ala Ala Glu Lys Met
```

```
           195                     200                     205
Leu Lys Lys Ala Ser Lys Glu Ile Tyr Gln Leu Arg Gly Gln Ser His
      210                     215                     220
Lys Glu Pro Ile Gln Val Gln Thr Phe Arg Glu Lys Ile Ala Phe Phe
225                     230                     235                     240
Thr Arg Pro Arg Ile Asn Ile Pro Pro Leu Pro Ala Asp Asp Val
                  245                     250                     255
```

```
<210> 4655
<211> 456
<212> DNA
<213> Homo sapiens

<400> 4655
gcggccgcgc aggtcctcgc gcttgcggaa ggtgcgcacg tactccatgc ggtccagcgc
60
cacgagcagc aggaacaggc cgggcacaca cacagacagc agcagcgtca gcgccttgcg
120
cgccacgggg tccgccgcgc cgcgccgcgc cgccttgtag ttctggaaga tgaagtagag
180
cttgatctcc agcacgaaga tgtaaaggaa ccacaggatc atggcgtagc cgcgcttggc
240
cgtgcgcacc tcggcgccca cccacacggc cacgtagcgc agcaccagca ggaagcacac
300
gtcgcccacc agcacgatga tgcacacgcc gatcttgcgc gggccctggt tctgctccac
360
caggtacgcg tccatgacgg ccatgctgcc catgatcacc agcgtggtca ggcacacgtg
420
gcgccggtcc gggggcggca gcaccatggt cggccg
456
```

```
<210> 4656
<211> 152
<212> PRT
<213> Homo sapiens

<400> 4656
Ala Ala Ala Gln Val Leu Ala Leu Ala Glu Gly Ala His Val Leu His
1               5                   10                  15
Ala Val Gln Arg His Glu Gln Gln Glu Gln Ala Gly His Thr His Arg
            20                  25                  30
Gln Gln Gln Arg Gln Arg Leu Ala Arg His Gly Val Arg Arg Ala Ala
        35                  40                  45
Pro Arg Arg Leu Val Val Leu Glu Asp Glu Val Glu Leu Asp Leu Gln
    50                  55                  60
His Glu Asp Val Lys Glu Pro Gln Asp His Gly Val Ala Ala Leu Gly
65                  70                  75                  80
Arg Ala His Leu Gly Ala His Pro His Gly His Val Ala Gln His Gln
                85                  90                  95
Gln Glu Ala His Val Ala His Gln His Asp Asp Ala His Ala Asp Leu
            100                 105                 110
Ala Arg Ala Leu Val Leu Leu His Gln Val Arg Val His Asp Gly His
        115                 120                 125
Ala Ala His Asp His Gln Arg Gly Gln Ala His Val Ala Pro Val Arg
```

```
          130                    135                    140
Gly Arg Gln His His Gly Arg Pro
145                    150


<210> 4657
<211> 723
<212> DNA
<213> Homo sapiens

<400> 4657
nnacgcgtga tggctggcgg agtcatggac aaggagtacg tgggttttgc tgccctcccc
60
aaccagctgc accgcaagtc tgtcaagaag gggtttgact tcacgctaat ggtggcaggg
120
gagtcaggcc tagggaaatc caccctcatc aacagcctct tcctcaccaa cctctatgag
180
gatcgccagg tgccagaggc cagtgctcgc ttgacacaga ccctggccat tgagcgccgg
240
ggcgtagaga ttgaggaagg gggtgtgaaa gtgaagctga cccttgtgga cacacctggc
300
tttggggact cagtggactg ctctgactgc tggcttccgg tggtgaaatt catcgaggag
360
caatttgagc agtaccttag ggatgagagt ggcctgaacc ggaagaacat ccaggactcc
420
cgagtccact gctgcctcta cttcatctca cccttcggcc gggctccggc ccctagatgt
480
ggcttcctcc gggcaataca cgagaaagtc aacatcatcc cagtcattgg caaagcggat
540
gccctgatgc cccaggaaac ccaggccctc aagcagaaga tccgggatca gttgaaggaa
600
gaggagatcc acatctacca gttccccgaa tgtgactctg atgaagatga agacttcaag
660
aggcaggatg cagagatgaa ggaaagcatc ccttttgcag tcgtgggatc atgcgaggtg
720
gta
723


<210> 4658
<211> 233
<212> PRT
<213> Homo sapiens

<400> 4658
Met Asp Lys Glu Tyr Val Gly Phe Ala Ala Leu Pro Asn Gln Leu His
1                   5                   10                  15
Arg Lys Ser Val Lys Lys Gly Phe Asp Phe Thr Leu Met Val Ala Gly
            20                  25                  30
Glu Ser Gly Leu Gly Lys Ser Thr Leu Ile Asn Ser Leu Phe Leu Thr
        35                  40                  45
Asn Leu Tyr Glu Asp Arg Gln Val Pro Glu Ala Ser Ala Arg Leu Thr
    50                  55                  60
Gln Thr Leu Ala Ile Glu Arg Arg Gly Val Glu Ile Glu Glu Gly Gly
65                  70                  75                  80
Val Lys Val Lys Leu Thr Leu Val Asp Thr Pro Gly Phe Gly Asp Ser
```

```
                    85                    90                    95
Val Asp Cys Ser Asp Cys Trp Leu Pro Val Val Lys Phe Ile Glu Glu
                    100                   105                   110
Gln Phe Glu Gln Tyr Leu Arg Asp Glu Ser Gly Leu Asn Arg Lys Asn
        115                   120                   125
Ile Gln Asp Ser Arg Val His Cys Cys Leu Tyr Phe Ile Ser Pro Phe
        130                   135                   140
Gly Arg Ala Pro Ala Pro Arg Cys Gly Phe Leu Arg Ala Ile His Glu
145                   150                   155                   160
Lys Val Asn Ile Ile Pro Val Ile Gly Lys Ala Asp Ala Leu Met Pro
                    165                   170                   175
Gln Glu Thr Gln Ala Leu Lys Gln Lys Ile Arg Asp Gln Leu Lys Glu
                    180                   185                   190
Glu Glu Ile His Ile Tyr Gln Phe Pro Glu Cys Asp Ser Asp Glu Asp
        195                   200                   205
Glu Asp Phe Lys Arg Gln Asp Ala Glu Met Lys Glu Ser Ile Pro Phe
        210                   215                   220
Ala Val Val Gly Ser Cys Glu Val Val
225                   230
```

<210> 4659
<211> 864
<212> DNA
<213> Homo sapiens

<400> 4659
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tttaaaagca gtggaaatta gtaaacaagg ttccgagcag gaaatgtctt gtggcctggg
60
agagaatctc accacaaatg aaaactacgt gaaaggccct gcactgaaaa tgcaagctca
120
ggcgccggtg gtcgttgtga cccaacctgg agtcggtccc ggtccggccc cccagaactc
180
caactggcag acaggcatgt gtgactgttt cagcgactgc ggagtctgtc tctgtggcac
240
attttgtttc ccgtgccttg ggtgtcaagt tgcagctgat atgaatgaat gctgtctgtg
300
tggaacaagc gtcgcaatga ggactctcta caggacccga tatggcatcc ctggatctat
360
ttgtgatgac tatatggcaa ctctttgctg tcctcattgt actctttgcc aaatcaagag
420
agatatcaac agaaggagag ccatgcgtac tttctaaaaa ctgatggtga aaagctctta
480
ccgaagcaac aaaattcagc agacacctct tcagcttgag ttcttcacca tcttttgcaa
540
ctgaaatatg atggatatgc ttaagtacaa ctgatggcat gaaaaaaatc aaatttttga
600
tttattataa atgaatgttg tccctgaact tagctaaatg gtgcaactta gtttctcctt
660
gctttcatat tatcgaattc gaatttcctg gcttataaac tttttaaatt acatttgaaa
720
tataaaccaa atgaaatatt ttactgataa gattcttcat gcttctttgc tctccttaaa
780
atgtcttttt cactagttag ttccaagggt cagtctcata attttgttct tatactttga
840
```

tttccttttt cttttttttt tttg
864

<210> 4660
<211> 192
<212> PRT
<213> Homo sapiens

<400> 4660
Met Pro Ser Val Val Leu Lys His Ile His His Ile Ser Val Ala Lys
1   5   10   15
Asp Gly Glu Glu Leu Lys Leu Lys Arg Cys Leu Leu Asn Phe Val Ala
            20   25   30
Ser Val Arg Ala Phe His His Gln Phe Leu Glu Ser Thr His Gly Ser
        35   40   45
Pro Ser Val Asp Ile Ser Leu Asp Leu Ala Lys Ser Thr Met Arg Thr
    50   55   60
Ala Lys Ser Cys His Ile Val Ile Thr Asn Arg Ser Arg Asp Ala Ile
65   70   75   80
Ser Gly Pro Val Glu Ser Pro His Cys Asp Ala Cys Ser Thr Gln Thr
                85   90   95
Ala Phe Ile His Ile Ser Cys Asn Leu Thr Pro Lys Ala Arg Glu Thr
            100   105   110
Lys Cys Ala Thr Glu Thr Asp Ser Ala Val Ala Glu Thr Val Thr His
        115   120   125
Ala Cys Leu Pro Val Gly Val Leu Gly Gly Arg Thr Gly Thr Asp Ser
    130   135   140
Arg Leu Gly His Asn Asp His Arg Arg Leu Ser Leu His Phe Gln Cys
145   150   155   160
Arg Ala Phe His Val Val Phe Ile Cys Gly Glu Ile Leu Ser Gln Ala
                165   170   175
Thr Arg His Phe Leu Leu Gly Thr Leu Phe Thr Asn Phe His Cys Phe
            180   185   190

<210> 4661
<211> 153
<212> DNA
<213> Homo sapiens

<400> 4661
cggatctgca tgccgctcac cgtagacgag tacaaaattg gacagctgta catgatcagc
60
aaacacagcc atgaacagag tgaccgggga gaaggggtgg aggtcgtcca gaatgagccc
120
tttgaggacc ctcaccatgg ccatgggcag ttc
153

<210> 4662
<211> 51
<212> PRT
<213> Homo sapiens

<400> 4662
Arg Ile Cys Met Pro Leu Thr Val Asp Glu Tyr Lys Ile Gly Gln Leu

```
 1                    5                    10                    15
Tyr Met Ile Ser Lys His Ser His Glu Gln Ser Asp Arg Gly Glu Gly
              20                    25                    30
Val Glu Val Val Gln Asn Glu Pro Phe Glu Asp Pro His His Gly His
         35                    40                    45
Gly Gln Phe
      50
```

<210> 4663
<211> 1550
<212> DNA
<213> Homo sapiens

<400> 4663

```
atgttccggc acacggacag cctctttccc atcctactgc agacgttatc ggatgaatcg
60
gatgaggtga tcctgaagga cctggaggtg ctggcagaaa tcgcttcctc ccccgcaggc
120
cagacggatg acccaggccc cctcgatggc cctgacctcc aggccagcca tcagagctc
180
caggtgccca cccctggcag agccggccta ctgaacacct ctggtaccaa aggcttagaa
240
tgttctcctt caactcccac catgaattct tactttttata agttcatgat caaccttctc
300
aagagattca gcagcgaacg gaagctcctg gaggtcagag gccctttcat catcaggcag
360
ctgtgcctcc tgctgaatgc ggagaacatc ttccactcaa tggcagacat cctgctgcgg
420
gaggaggacc tcaagttcgc ctcgaccatg gtccacgccc tcaacaccat cctgctgacc
480
tccacagagc tcttccagct aaggaaccag ctgaaggacc tgaagaccct ggagagccag
540
aacctgttct gctgcctgta ccgctcctgg tgccacaacc cagtcaccac ggtgtccctc
600
tgcttcctca cccagaacta ccggcacgcc tatgacctca tccagaagtt tggggacctg
660
gaggtcaccg tggacttcct cgcagaggtg gacaagctgg tgcagctgat tgagtgcccc
720
atcttcacat atctgcgcct gcagctgctg gacgtgaaga caaaccccta cctgatcaag
780
gccctctacg cctgctcat gctcctgccg cagagcagcg ccttccagct gctctcgcac
840
cggctccagt gcgtgcccaa ccctgagctg ctgcagaccg aagacagtct aaaggcagcc
900
cccaagtccc agaaagctga ctcccctagc atcgactacg cagagctgct gcagcacttt
960
gagaaggtcc agaacaagca cctggaagtg cggcaccagc ggagcgggcg tggggaccac
1020
ctggaccgga gggttgtcct ctgacaggcc tggcacggag gagggcccac cgagtggtcc
1080
catgaaacac taagggtcgt cacgccctcc cgaggagctc aaggacctgc ctgtcaggac
1140
cagggctggg cctgccaacc cagggcagtg ttggggccgg aggctgctgt gtctgcccaa
1200
```

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gctcctctca gagtccagtc cccaggcctc cagcgctgtc agctgcaccc tggcattctc
1260
acagagctgg ctgcccaccc agtggggggc tatagcctca gagaccactc atcctctgga
1320
atcaacctct ttctaatacc ctcttggaaa aagagcttgc ccctcctcca gcacactaga
1380
gctctggcct tgtgtgtata tgtatacata cgtgaacaca tgcctgtgtg tgtgtgtgtg
1440
tgtgtacttg tatgcacgta ggcaccagca caaagatctg aatgatgcac cccacccccca
1500
ccccaataaa gaaataacag aaaaccctca aaaaaaaaa aaaaaaaaa
1550
```

<210> 4664
<211> 347
<212> PRT
<213> Homo sapiens

<400> 4664

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Met Phe Arg His Thr Asp Ser Leu Phe Pro Ile Leu Leu Gln Thr Leu
1               5                   10                  15
Ser Asp Glu Ser Asp Glu Val Ile Leu Lys Asp Leu Glu Val Leu Ala
            20                  25                  30
Glu Ile Ala Ser Ser Pro Ala Gly Gln Thr Asp Asp Pro Gly Pro Leu
            35                  40                  45
Asp Gly Pro Asp Leu Gln Ala Ser His Ser Glu Leu Gln Val Pro Thr
        50                  55                  60
Pro Gly Arg Ala Gly Leu Leu Asn Thr Ser Gly Thr Lys Gly Leu Glu
65                  70                  75                  80
Cys Ser Pro Ser Thr Pro Thr Met Asn Ser Tyr Phe Tyr Lys Phe Met
                85                  90                  95
Ile Asn Leu Leu Lys Arg Phe Ser Ser Glu Arg Lys Leu Leu Glu Val
            100                 105                 110
Arg Gly Pro Phe Ile Ile Arg Gln Leu Cys Leu Leu Leu Asn Ala Glu
            115                 120                 125
Asn Ile Phe His Ser Met Ala Asp Ile Leu Leu Arg Glu Glu Asp Leu
        130                 135                 140
Lys Phe Ala Ser Thr Met Val His Ala Leu Asn Thr Ile Leu Leu Thr
145                 150                 155                 160
Ser Thr Glu Leu Phe Gln Leu Arg Asn Gln Leu Lys Asp Leu Lys Thr
                165                 170                 175
Leu Glu Ser Gln Asn Leu Phe Cys Cys Leu Tyr Arg Ser Trp Cys His
            180                 185                 190
Asn Pro Val Thr Thr Val Ser Leu Cys Phe Leu Thr Gln Asn Tyr Arg
            195                 200                 205
His Ala Tyr Asp Leu Ile Gln Lys Phe Gly Asp Leu Glu Val Thr Val
        210                 215                 220
Asp Phe Leu Ala Glu Val Asp Lys Leu Val Gln Leu Ile Glu Cys Pro
225                 230                 235                 240
Ile Phe Thr Tyr Leu Arg Leu Gln Leu Leu Asp Val Lys Asn Asn Pro
                245                 250                 255
Tyr Leu Ile Lys Ala Leu Tyr Gly Leu Leu Met Leu Leu Pro Gln Ser
            260                 265                 270
Ser Ala Phe Gln Leu Leu Ser His Arg Leu Gln Cys Val Pro Asn Pro
```

```
          275                    280                    285
Glu Leu Leu Gln Thr Glu Asp Ser Leu Lys Ala Ala Pro Lys Ser Gln
     290                    295                    300
Lys Ala Asp Ser Pro Ser Ile Asp Tyr Ala Glu Leu Leu Gln His Phe
305                    310                    315                    320
Glu Lys Val Gln Asn Lys His Leu Glu Val Arg His Gln Arg Ser Gly
                    325                    330                    335
Arg Gly Asp His Leu Asp Arg Arg Val Val Leu
               340                    345
```

<210> 4665
<211> 1043
<212> DNA
<213> Homo sapiens

<400> 4665
nttcggcacg agggtggatc tcatcgaaag gcggcgcgat ctgtgtcggg cattaccaga
60
agagtcttca tgtggacagt ctcagggaca ccatgtagag aattttggtc tcgattcaga
120
aaagagaaag agccagtggt tgttgagaca gtagaagaga aaaaggaacc tatcctagtg
180
tgtccacctt tacgaagccg agcatacaca ccacctgaag atctccagag tcgtttggaa
240
tcttacgtta aagaagtttt tggttcatct cttcctagta attggcaaga catctccctg
300
gaagatagtc gtctaaagtt caatcttctg gctcatttag ctgatgactt gggtcatgta
360
gtccctaact ccagactcca ccagatgtgc agggttagag atgttcttga tttctataat
420
gtccctattc aagatagatc taaatttgat gaactcagtg ccagtaatct gccccccaat
480
ttgaaaatca cttggagtta ctaagcaatt cggaagagaa acacattgaa atcactgtct
540
ttccctgagc aagggggctg ctcattagat cttttgatac tttaccatgt gaaatactac
600
cagaactgtt ctctaaaccc acttttctg tagaggaatg tatcatcttt tttttttctca
660
tattacaaat ggacaaataa cggacttttct attttcatat ttgctgaaac cattttttaa
720
atgaaattag gtcattattt atgaaaagtt ttgagagggc actgtcaact tgggtttaag
780
acaggaggac attgcaagtt cacaccttc ataagcataa agtagttgca agaaagtatt
840
ttcatcctgt taggattcat atctaagata gagttatgca ttgcacatac acaaataaac
900
ttttattaga tagataccta taaagaaac ataaagtat gttgtgtatt actgacagtt
960
ctagattaat ttctttaga attaaagtag atttgttaaa aaaaaaaaaa aaaaaaaaaa
1020
aaaaaaaaaa aaaaaaaaaa aaa
1043

<210> 4666
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<211> 167
<212> PRT
<213> Homo sapiens

<400> 4666
Xaa Arg His Glu Gly Gly Ser His Arg Lys Ala Ala Arg Ser Val Ser
1                   5                   10                  15
Gly Ile Thr Arg Arg Val Phe Met Trp Thr Val Ser Gly Thr Pro Cys
            20                  25                  30
Arg Glu Phe Trp Ser Arg Phe Arg Lys Glu Lys Glu Pro Val Val Val
            35                  40                  45
Glu Thr Val Glu Glu Lys Lys Glu Pro Ile Leu Val Cys Pro Pro Leu
        50                  55                  60
Arg Ser Arg Ala Tyr Thr Pro Pro Glu Asp Leu Gln Ser Arg Leu Glu
65                  70                  75                  80
Ser Tyr Val Lys Glu Val Phe Gly Ser Ser Leu Pro Ser Asn Trp Gln
                85                  90                  95
Asp Ile Ser Leu Glu Asp Ser Arg Leu Lys Phe Asn Leu Leu Ala His
            100                 105                 110
Leu Ala Asp Asp Leu Gly His Val Val Pro Asn Ser Arg Leu His Gln
            115                 120                 125
Met Cys Arg Val Arg Asp Val Leu Asp Phe Tyr Asn Val Pro Ile Gln
            130                 135                 140
Asp Arg Ser Lys Phe Asp Glu Leu Ser Ala Ser Asn Leu Pro Pro Asn
145                 150                 155                 160
Leu Lys Ile Thr Trp Ser Tyr
                165

<210> 4667
<211> 1031
<212> DNA
<213> Homo sapiens

<400> 4667
ntggccatgg gcacgtccct gtatgccccc gaggtatgta actgctctgc gcctgacacg
60
ggcaacatgg agctgctggt gaggtatggc accgaagcgc agaaggctcg ctggctgatt
120
cctctgctgg aggggaaagc ccgctcctgt tttgctatga ccgagcccca ggttgcctct
180
tcagatgcca ccaacattga ggcttccatc agagaggagg acagcttcta tgtcataaac
240
ggtcacaaat ggtggatcac aggcatcctg gatcctcgtt gccaactctg tgtgtttatg
300
ggaaaaacag acccacatgc accaagacac cggcagcagt ctgtgctctt ggttcccatg
360
gataccccag ggataaaaat catccggcct ctgacggtgt atggactgga agatgcacca
420
ggtggccatg gtgaagtccg atttgagcac gtgcgtgtgc ccaaagagaa catggtcctg
480
ggccctggcc gaggctttga gatcgcccag ggcagactgg ccccggcag gatccatcac
540
tgcatgaggc tgatcgggtt ctcagagagg gccctggcac tcatgaaggc ccgcgtgagt
600

gctttccccc gcacccagca ctgactcaga accaccacct tctgctttgc tgtcggactt
660
caattcctac ctgttttctg agtgcagtcc tagcaggtga agcaaggtga tgtccttgcc
720
aagaagttgc attcctgtct gctttgcatc tgctactttg ctgcagtttg gattcagagc
780
agaatggacc ccactctgtc gaggtgacct gaagggaaac gccaggctct gtagcagcag
840
agggcaaggt tccaaggtgt aaaggtcatg ctgctagcac attattaaaa atcagtctgg
900
gtgcaatggc tcacagctat aatcccagta ctttgggagg tctaggtagg agggttgctt
960
gaagccaagc atttgagacc agcctaggcg aaaaagagag actcagtctc tacaaaaaaa
1020
aaaaaaaaaa a
1031


<210> 4668
<211> 207
<212> PRT
<213> Homo sapiens

<400> 4668
Xaa Ala Met Gly Thr Ser Leu Tyr Ala Pro Glu Val Cys Asn Cys Ser
1               5                   10                  15
Ala Pro Asp Thr Gly Asn Met Glu Leu Leu Val Arg Tyr Gly Thr Glu
            20                  25                  30
Ala Gln Lys Ala Arg Trp Leu Ile Pro Leu Leu Glu Gly Lys Ala Arg
        35                  40                  45
Ser Cys Phe Ala Met Thr Glu Pro Gln Val Ala Ser Ser Asp Ala Thr
    50                  55                  60
Asn Ile Glu Ala Ser Ile Arg Glu Glu Asp Ser Phe Tyr Val Ile Asn
65                  70                  75                  80
Gly His Lys Trp Trp Ile Thr Gly Ile Leu Asp Pro Arg Cys Gln Leu
                85                  90                  95
Cys Val Phe Met Gly Lys Thr Asp Pro His Ala Pro Arg His Arg Gln
            100                 105                 110
Gln Ser Val Leu Leu Val Pro Met Asp Thr Pro Gly Ile Lys Ile Ile
        115                 120                 125
Arg Pro Leu Thr Val Tyr Gly Leu Glu Asp Ala Pro Gly Gly His Gly
    130                 135                 140
Glu Val Arg Phe Glu His Val Arg Val Pro Lys Glu Asn Met Val Leu
145                 150                 155                 160
Gly Pro Gly Arg Gly Phe Glu Ile Ala Gln Gly Arg Leu Gly Pro Gly
                165                 170                 175
Arg Ile His His Cys Met Arg Leu Ile Gly Phe Ser Glu Arg Ala Leu
            180                 185                 190
Ala Leu Met Lys Ala Arg Val Ser Ala Phe Pro Arg Thr Gln His
        195                 200                 205


<210> 4669
<211> 683
<212> DNA
<213> Homo sapiens

<400> 4669
nnaagcttca gtgggctacg tggaatcata caagaaaaat atagagcaaa taaaaagaaa
60
cagaaagtat ttcaacacaa tgaacttaag aaagagactt gtgttcaggc aggttttcag
120
gacatgaaca taaaaaaaca gattcaggaa cagcaccagg ctgccattat tattcagaag
180
cattgtaaag cctttaaaat aaggaagcat tatctccaca ttagagcaac agtagtttct
240
attcaaagaa gatacagaaa actaactgca gtgcgtaccc aagcagttat ttgtatacag
300
tcttattaca gaggctttaa agtacgaaag gatattcaaa atatgcaccg ggctgccaca
360
ctaattcagt cattctatcg aatgcacagg gccaaagttg attattaaac aaagaaaact
420
gcaattgtgg ttatacagaa ttattatagg ttgtatgtta gagtaaaaac agaaagaaaa
480
aacttttttag cagttcagaa atctgtccga actattcagg ctgctttttag aggcatgaaa
540
gttagacaaa aattgaaaaa atgtatcaga ggaaaagatg gcagccattg ttaaccaatc
600
tgcactctgc tgttacagaa gtaaaactca gtatgaagct gttcaaagtg aaggtgttat
660
gattcaagag tggtataaag ctt
683


<210> 4670
<211> 135
<212> PRT
<213> Homo sapiens

<400> 4670

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Xaa Ser Phe Ser Gly Leu Arg Gly Ile Ile Gln Glu Lys Tyr Arg Ala
  1           5                  10                  15
Asn Lys Lys Lys Gln Lys Val Phe Gln His Asn Glu Leu Lys Lys Glu
             20                  25                  30
Thr Cys Val Gln Ala Gly Phe Gln Asp Met Asn Ile Lys Lys Gln Ile
         35                  40                  45
Gln Glu Gln His Gln Ala Ala Ile Ile Ile Gln Lys His Cys Lys Ala
     50                  55                  60
Phe Lys Ile Arg Lys His Tyr Leu His Ile Arg Ala Thr Val Val Ser
 65                  70                  75                  80
Ile Gln Arg Arg Tyr Arg Lys Leu Thr Ala Val Arg Thr Gln Ala Val
                 85                  90                  95
Ile Cys Ile Gln Ser Tyr Tyr Arg Gly Phe Lys Val Arg Lys Asp Ile
                100                 105                 110
Gln Asn Met His Arg Ala Ala Thr Leu Ile Gln Ser Phe Tyr Arg Met
             115                 120                 125
His Arg Ala Lys Val Asp Tyr
         130                 135
```


<210> 4671
<211> 657

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<212> DNA
<213> Homo sapiens

<400> 4671
accggtccag ggcattcagg tgttcctcca ggcccaggag agtgctgcac acccgttcca
60
gcaccagcgc catccgcttc gaggttgagc ctcctgcagc agtggaatca ggggcctcct
120
ggggctcggc aggggctacc cggctccgct tccgcccagt aatggagact gcagccacgt
180
taggccaggc tgctgcagtg gtttcagcat ctatccgcag ggatccacgg ggaagctggt
240
gtgcgccgga taaagatggc aaccgccgat gagattgtga aactcatgct cgaccacatg
300
acaaacacca ccaacgcgtc ccatgtgcct gtgcagcccg gctcctcagt tgtgatgatg
360
gtcaacaacc tgggtggcct gtcattcctg gaactgggca tcatagccga cgctaccgtc
420
cgctccctgg agggccgcgg ggtgaagatt gcccgtgccc tggtgggcac cttcatgtca
480
gcactggaga tgcctggcat ttctctcacc ctcctgctgg tggatgagcc tctcctgaaa
540
ctgatagatg ctgaaaccac tgcagcagcc tggcctcgaa gcggatggcg ctggtgctgg
600
aacgggtgtg cagcactctc ctgggcctgg aggaacacct gaatgccctg gaccggt
657

<210> 4672
<211> 152
<212> PRT
<213> Homo sapiens

<400> 4672
Ala Arg Leu Leu Gln Trp Phe Gln His Leu Ser Ala Gly Ile His Gly
1               5                   10                  15
Glu Ala Gly Val Arg Arg Ile Lys Met Ala Thr Ala Asp Glu Ile Val
            20                  25                  30
Lys Leu Met Leu Asp His Met Thr Asn Thr Asn Ala Ser His Val
        35                  40                  45
Pro Val Gln Pro Gly Ser Ser Val Val Met Met Val Asn Asn Leu Gly
    50                  55                  60
Gly Leu Ser Phe Leu Glu Leu Gly Ile Ile Ala Asp Ala Thr Val Arg
65                  70                  75                  80
Ser Leu Glu Gly Arg Gly Val Lys Ile Ala Arg Ala Leu Val Gly Thr
                85                  90                  95
Phe Met Ser Ala Leu Glu Met Pro Gly Ile Ser Leu Thr Leu Leu Leu
            100                 105                 110
Val Asp Glu Pro Leu Leu Lys Leu Ile Asp Ala Glu Thr Thr Ala Ala
            115                 120                 125
Ala Trp Pro Arg Ser Gly Trp Arg Trp Cys Trp Asn Gly Cys Ala Ala
    130                 135                 140
Leu Ser Trp Ala Trp Arg Asn Thr
145                 150
```

<210> 4673
<211> 1335
<212> DNA
<213> Homo sapiens

<400> 4673
ccgcggcttc tggctgcgcg gcctgcgcgc gcctcccggg cggattccag ccccgagcgg
60
gacagcgcag cggggagcga cgagatttct ctctgatcaa acggacagtt caggactcag
120
aatctaagga tgaatgttca ccgtggcagt gacagtgaca ggttattgcg gcaggaggcc
180
agctgcttag tggatgatac tttagctgta gcccaagaaa aagaagcaaa cagcctggct
240
tcatctggtc ctcataatct tacttatcct ctaggtccca ggaatgaaga cctctcactt
300
gactatgcct ctcagccagc aaatcttcag ttccctcaca taatgcccct tgctgaagac
360
atcaaaggtt cttgcttcca aagtgggaat aaacggaacc atgaaccttt tattgctcca
420
gaaagatttg gaaacagtag tgtgggcttt ggcagtaatt cccattccca agcaccagag
480
aaagtgacgc ttcttgtaga tggcacacgt tttgttgtga atccacagat tttcactgct
540
catccggata ccatgctggg aaggatgttt ggaccaggaa gagagtacaa cttcactcgg
600
cccaatgaga agggagagta tgagattgct gaaggcatca gtgcaactgt atttcgcaca
660
gtgctggatt attacaaaac cggtatcatc aattgtcctg atggcatctc tatcccagat
720
cttagagata cttgtgatta tctctgcatt aattttgact tcaacactat ccgatgtcaa
780
gatctgagtg ctttactcca tgaactgtct aatgacggtg ctcataagca gtttgatcac
840
tacctcgaag agctcatctt gcccatcatg gtgggctgtg ccaagaaagg agaacgagag
900
tgccacattg ttgtgctgac ggatgaggat tctgtggact gggatgaaga ccaccctcca
960
ccaatggggg aggaatattc ccaaattctt tatagctcca agctctacag attcttcaaa
1020
tatattgaga ataggggatgt tgcaaaaaca gtgttaaagg aacggggcct aaaaaacatt
1080
cgcattggaa ttgaaggtta ccctacctgt aaagaaaaaa ttaagagaag gcctggcggc
1140
cgttctgaag tcatctataa ttatgtacaa cgcccccttca tccagatgtc atgggaaaag
1200
gaagaaggga agagtcgcca tgtggatttc cagtgtgttc gaagcaaatc cctcacgaat
1260
ctggtagctg ctggagatga tgtcttggag gaccaggaga tattaatgca tcacccaccc
1320
caagtggatg aactt
1335

<210> 4674

<211> 402
<212> PRT
<213> Homo sapiens

<400> 4674
Met Asn Val His Arg Gly Ser Asp Ser Asp Arg Leu Leu Arg Gln Glu
1   5   10   15
Ala Ser Cys Leu Val Asp Asp Thr Leu Ala Val Ala Gln Glu Lys Glu
            20   25   30
Ala Asn Ser Leu Ala Ser Ser Gly Pro His Asn Leu Thr Tyr Pro Leu
        35   40   45
Gly Pro Arg Asn Glu Asp Leu Ser Leu Asp Tyr Ala Ser Gln Pro Ala
    50   55   60
Asn Leu Gln Phe Pro His Ile Met Pro Leu Ala Glu Asp Ile Lys Gly
65   70   75   80
Ser Cys Phe Gln Ser Gly Asn Lys Arg Asn His Glu Pro Phe Ile Ala
                85   90   95
Pro Glu Arg Phe Gly Asn Ser Ser Val Gly Phe Gly Ser Asn Ser His
            100   105   110
Ser Gln Ala Pro Glu Lys Val Thr Leu Leu Val Asp Gly Thr Arg Phe
        115   120   125
Val Val Asn Pro Gln Ile Phe Thr Ala His Pro Asp Thr Met Leu Gly
    130   135   140
Arg Met Phe Gly Pro Gly Arg Glu Tyr Asn Phe Thr Arg Pro Asn Glu
145   150   155   160
Lys Gly Glu Tyr Glu Ile Ala Glu Gly Ile Ser Ala Thr Val Phe Arg
                165   170   175
Thr Val Leu Asp Tyr Tyr Lys Thr Gly Ile Ile Asn Cys Pro Asp Gly
            180   185   190
Ile Ser Ile Pro Asp Leu Arg Asp Thr Cys Asp Tyr Leu Cys Ile Asn
        195   200   205
Phe Asp Phe Asn Thr Ile Arg Cys Gln Asp Leu Ser Ala Leu Leu His
    210   215   220
Glu Leu Ser Asn Asp Gly Ala His Lys Gln Phe Asp His Tyr Leu Glu
225   230   235   240
Glu Leu Ile Leu Pro Ile Met Val Gly Cys Ala Lys Lys Gly Glu Arg
                245   250   255
Glu Cys His Ile Val Val Leu Thr Asp Glu Asp Ser Val Asp Trp Asp
            260   265   270
Glu Asp His Pro Pro Pro Met Gly Glu Glu Tyr Ser Gln Ile Leu Tyr
        275   280   285
Ser Ser Lys Leu Tyr Arg Phe Phe Lys Tyr Ile Glu Asn Arg Asp Val
    290   295   300
Ala Lys Thr Val Leu Lys Glu Arg Gly Leu Lys Asn Ile Arg Ile Gly
305   310   315   320
Ile Glu Gly Tyr Pro Thr Cys Lys Glu Lys Ile Lys Arg Arg Pro Gly
                325   330   335
Gly Arg Ser Glu Val Ile Tyr Asn Tyr Val Gln Arg Pro Phe Ile Gln
            340   345   350
Met Ser Trp Glu Lys Glu Glu Gly Lys Ser Arg His Val Asp Phe Gln
        355   360   365
Cys Val Arg Ser Lys Ser Leu Thr Asn Leu Val Ala Ala Gly Asp Asp
    370   375   380
Val Leu Glu Asp Gln Glu Ile Leu Met His His Pro Pro Gln Val Asp

```
              385             390             395             400
Glu Leu


<210> 4675
<211> 2868
<212> DNA
<213> Homo sapiens

<400> 4675
ngaattcccc ggttgattct tcggccccat atgccccaac aacagcacaa agtgtcccca
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gcctctgagt ctcctttctc tgaggaagag agcagagagt tcaaccccag cagctctggg
120
cgctcagcga ggaccgttag cagcaacagc ttctgctcag atgacacagg ctgtcctagc
180
agccagtcag tgtctcctgt gaagacaccc tcagatgctg gaaacagccc cattggcttt
240
tgccctggaa gtgatgaagg cttcaccaga aagaaatgca cgattggaat ggttggtgaa
300
ggaagcattc agtcctctcg atataagaag gaatcaaagt caggccttgt gaaaccaggt
360
agtgaagctg attttagctc ctcgagcagc acaggcagca tttccgctcc tgaggtccat
420
atgtcgactg cgggaagcaa gcggtcttct tcttcacgca atcgaggtcc tcatgggcgg
480
agtaatggag cttcgtcaca caagcctggc agcagctcat catccccgcg ggaaaaggac
540
cttctgtcca tgctgtgcag gaatcagctg agccctgtca atatccatcc cagttatgca
600
ccttcttccc caagcagtag caactcaggc tcctacaaag gaagcgactg tagccccatc
660
atgaggcgtt ctggaaggta catgtcttgc ggtgaaaatc atggtgtcag acccccaaac
720
ccagagcagt atttgactcc actgcagcag aaagaggtga cagtgagaca cctcaaaacc
780
aagctgaagg aatctgagcg ccgactccat gaaagggaaa gtgaaatcgt ggagcttaag
840
tcccagctgg cccgcatgcg agaggactgg attgaggagg agtgtcaccg ggtagaggcc
900
cagttggcac tcaaagaagc caggaaagag attaaacagc tcaaacaggt catcgaaacc
960
atgcggagca gcttggctga taaagataaa ggcattcaga atatttttgt ggacataaac
1020
atccaaaaca agaagctgga gtctctcctt cagagcatgg agatggcaca cagtggctct
1080
ctgagggacg aactgtgcct agactttcca tgtgattccc cagagaagag cttaaccctc
1140
aacccccctc ttgacacaat ggcagatggg ttatctctgg aagagcaggt cacggggaa
1200
ggggctgaca gggagctact ggtaggagat agcatagcca acagcacaga tttgttcgat
1260
gagatagtga cagccaccac cacagaatct ggtgacctgg agcttgtgca ttccaccccct
1320
```

ggggctaacg tcctggagct gctgcccata gtcatgggtc aggaggaggg cagtgtggtg
1380
gtggagcgag ccgttcagac cgacgtggtg ccctacagcc cagccatctc agagctcatt
1440
cagagtgtgc tgcagaagct ccaggacccc tgtccctcga gcttggcgtc ccctgatgag
1500
tctgaaccag actcgatgga gagcttccca gagtccctct ctgccttagt ggttgattta
1560
actccaagaa atccaaactc agccatcctt ttgtctcccg tggagacccc ctacngccaa
1620
tgtggatgca gaagttcatg caaaccgcct catgagagag ctggannttt tgcagcctgc
1680
gtggaagaga ggttggatgg tgtcatccca ctggctcgcg ggggcgtcgt gaggcagtac
1740
tggagcagca gcttcctggt ggatctcctg gctgtggctg ccccgtggt ccccacggtt
1800
ctgtgggcat tcagtactca gagagggga acggatcctg tgtataacat cggggccttg
1860
ctcaggggct gttgcgtggt tgccctgcat tcgctccgcc gcaccgcctt ccgtatcaaa
1920
acctaaatag aagttgttgt taccgtgtgc caatgtgtcc catgtgggtt gtgccaggta
1980
gagaaacagg aagtcaatca tctgtgacag tctctattct gtcgttttgc tccttggtat
2040
ttgatttgca ctatatttag ttgaagcctg ttcactgttt aaaaccggag gtatcttcaa
2100
aggcatggag acctggttcc agtaaatgtc ccaccagtgg ggtatagaaa gcatgctcat
2160
gaccctgccg tgtcgtctga ggtacccgtt cttatcctag tggttcagga agagaaaacg
2220
cagtttgcac tttcaagaca gcttctctaa ggctggcatg ttatctcctt gctttgcttt
2280
ttgccgtttt aaaatgtgta attgttccag cattccaatg gtcttgtgca tagcagggga
2340
ctgtaaccaa aaataaacat gtatttgtgt aattggtttg aagaagtctt gaatagctct
2400
ttactgtctt acttggggtt gataagattt gagtgtttgc aatttttac taaatgtagc
2460
tccaaagtct taaatggctt gtttgttctt aaactgttaa ttgatgaaac tgtgcataag
2520
tttacaatgt actaacttat tttgcttatt atatatagtg ttttattgga aattgtaacc
2580
acacacttca gcatgatgaa aataaagatt agtgtttcca tttaaataaa tgttttatcc
2640
tcccataaaa taataattat ttctgtgatt ttacttctat gtataagaaa gacaatgaat
2700
agcagatctt acatctttat caataggggg tctgtaaaaa ttgaattaaa ttaggaagag
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2868

<210> 4676

<211> 641
<212> PRT
<213> Homo sapiens

<400> 4676
Xaa Ile Pro Arg Leu Ile Leu Arg Pro His Met Pro Gln Gln Gln His
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Lys Val Ser Pro Ala Ser Glu Ser Pro Phe Ser Glu Glu Glu Ser Arg
            20   25   30
Glu Phe Asn Pro Ser Ser Ser Gly Arg Ser Ala Arg Thr Val Ser Ser
        35   40   45
Asn Ser Phe Cys Ser Asp Asp Thr Gly Cys Pro Ser Ser Gln Ser Val
    50   55   60
Ser Pro Val Lys Thr Pro Ser Asp Ala Gly Asn Ser Pro Ile Gly Phe
65   70   75   80
Cys Pro Gly Ser Asp Glu Gly Phe Thr Arg Lys Lys Cys Thr Ile Gly
                85   90   95
Met Val Gly Glu Gly Ser Ile Gln Ser Ser Arg Tyr Lys Lys Glu Ser
            100   105   110
Lys Ser Gly Leu Val Lys Pro Gly Ser Glu Ala Asp Phe Ser Ser Ser
            115   120   125
Ser Ser Thr Gly Ser Ile Ser Ala Pro Glu Val His Met Ser Thr Ala
    130   135   140
Gly Ser Lys Arg Ser Ser Ser Ser Arg Asn Arg Gly Pro His Gly Arg
145   150   155   160
Ser Asn Gly Ala Ser Ser His Lys Pro Gly Ser Ser Ser Ser Ser Pro
                165   170   175
Arg Glu Lys Asp Leu Leu Ser Met Leu Cys Arg Asn Gln Leu Ser Pro
            180   185   190
Val Asn Ile His Pro Ser Tyr Ala Pro Ser Ser Pro Ser Ser Ser Asn
            195   200   205
Ser Gly Ser Tyr Lys Gly Ser Asp Cys Ser Pro Ile Met Arg Arg Ser
    210   215   220
Gly Arg Tyr Met Ser Cys Gly Glu Asn His Gly Val Arg Pro Pro Asn
225   230   235   240
Pro Glu Gln Tyr Leu Thr Pro Leu Gln Gln Lys Glu Val Thr Val Arg
                245   250   255
His Leu Lys Thr Lys Leu Lys Glu Ser Glu Arg Arg Leu His Glu Arg
                260   265   270
Glu Ser Glu Ile Val Glu Leu Lys Ser Gln Leu Ala Arg Met Arg Glu
            275   280   285
Asp Trp Ile Glu Glu Glu Cys His Arg Val Glu Ala Gln Leu Ala Leu
            290   295   300
Lys Glu Ala Arg Lys Glu Ile Lys Gln Leu Lys Gln Val Ile Glu Thr
305   310   315   320
Met Arg Ser Ser Leu Ala Asp Lys Asp Lys Gly Ile Gln Lys Tyr Phe
                325   330   335
Val Asp Ile Asn Ile Gln Asn Lys Lys Leu Glu Ser Leu Leu Gln Ser
            340   345   350
Met Glu Met Ala His Ser Gly Ser Leu Arg Asp Glu Leu Cys Leu Asp
            355   360   365
Phe Pro Cys Asp Ser Pro Glu Lys Ser Leu Thr Leu Asn Pro Pro Leu
370   375   380
Asp Thr Met Ala Asp Gly Leu Ser Leu Glu Glu Gln Val Thr Gly Glu

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385                   390                   395                   400
Gly Ala Asp Arg Glu Leu Leu Val Gly Asp Ser Ile Ala Asn Ser Thr
                405                   410                   415
Asp Leu Phe Asp Glu Ile Val Thr Ala Thr Thr Thr Glu Ser Gly Asp
                420                   425                   430
Leu Glu Leu Val His Ser Thr Pro Gly Ala Asn Val Leu Glu Leu Leu
        435                   440                   445
Pro Ile Val Met Gly Gln Glu Glu Gly Ser Val Val Val Glu Arg Ala
    450                   455                   460
Val Gln Thr Asp Val Val Pro Tyr Ser Pro Ala Ile Ser Glu Leu Ile
465                   470                   475                   480
Gln Ser Val Leu Gln Lys Leu Gln Asp Pro Cys Pro Ser Ser Leu Ala
                485                   490                   495
Ser Pro Asp Glu Ser Glu Pro Asp Ser Met Glu Ser Phe Pro Glu Ser
                500                   505                   510
Leu Ser Ala Leu Val Val Asp Leu Thr Pro Arg Asn Pro Asn Ser Ala
        515                   520                   525
Ile Leu Leu Ser Pro Val Glu Thr Pro Tyr Xaa Gln Cys Gly Cys Arg
        530                   535                   540
Ser Ser Cys Lys Pro Pro His Glu Arg Ala Gly Xaa Phe Ala Ala Cys
545                   550                   555                   560
Val Glu Glu Arg Leu Asp Gly Val Ile Pro Leu Ala Arg Gly Gly Val
                565                   570                   575
Val Arg Gln Tyr Trp Ser Ser Ser Phe Leu Val Asp Leu Leu Ala Val
                580                   585                   590
Ala Ala Pro Val Val Pro Thr Val Leu Trp Ala Phe Ser Thr Gln Arg
        595                   600                   605
Gly Gly Thr Asp Pro Val Tyr Asn Ile Gly Ala Leu Leu Arg Gly Cys
        610                   615                   620
Cys Val Val Ala Leu His Ser Leu Arg Arg Thr Ala Phe Arg Ile Lys
625                   630                   635                   640
Thr
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<210> 4677
<211> 940
<212> DNA
<213> Homo sapiens

<400> 4677

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120
tagaagctga ggttgggggtt cgtactggga agaaatctgg catcgagttc aattccgcca
180
ataactgggc aagcatggct ttgttctcct tgatgttcat ggtccttttc agtaaagcat
240
ctgaactctc ctggctctca tcccgagagt catcctcaga ctcagaggta gaatcttccc
300
tttgtatcac ctgtctacac tctttctttc tttcaagaat tgttttttc tcattctgta
360
aggtgcgcta gaaacaact gctcggaaga actgttttta tctggtttgt tggccagctt
420
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cttggtgggg aactgaaagg ctactcgaag accaatacta cttcttctag acctgcttct
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tctaggggta gcttatcttc ttcttcatct tcctcttcct cgctcaccaa agatgctttg
540
ccatcatcac tcaaatctga ctccacgacc attacttctg ggttagtctt tccattcaga
600
tcactctgcg taaatcctgc aaaatcctca gtctctgagt cagtgtcctc tataaaaatt
660
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720
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780
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840
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900
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940

<210> 4678
<211> 133
<212> PRT
<213> Homo sapiens

<400> 4678
Asn Leu Pro Phe Val Ser Pro Val Tyr Thr Leu Ser Phe Phe Gln Glu
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Leu Phe Phe Ser His Ser Val Arg Cys Ala Arg Lys Gln Leu Leu Gly
            20   25   30
Arg Thr Val Phe Ile Trp Phe Val Gly Gln Leu Leu Gly Gly Glu Leu
        35   40   45
Lys Gly Tyr Ser Lys Thr Asn Thr Thr Ser Ser Arg Pro Ala Ser Ser
    50   55   60
Arg Gly Ser Leu Ser Ser Ser Ser Ser Ser Ser Ser Ser Leu Thr Lys
65   70   75   80
Asp Ala Leu Pro Ser Ser Leu Lys Ser Asp Ser Thr Thr Ile Thr Ser
            85   90   95
Gly Leu Val Phe Pro Phe Arg Ser Leu Cys Val Asn Pro Ala Lys Ser
            100   105   110
Ser Val Ser Glu Ser Val Ser Ser Ile Lys Ile Leu Leu Ser Ser Ser
        115   120   125
Val Lys Tyr Leu Glu
    130

<210> 4679
<211> 2284
<212> DNA
<213> Homo sapiens

<400> 4679
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120

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taattacagg aatagaatgt acaataaaaa gtacagaata atgagtgaca gggatcaaac
180
acgttggaat aaaaggcatc tcagttttcc tatgcagcat tttcttttct aggaacacgt
240
taccttcaac caggacaagg aaagaaagaa aactatacta ttggaaagct catgggtgcc
300
attgaggaca aaaacaggcg agttttgctc ttggttctgc aactgaatca cttgagaagc
360
cgtgcacagc tcccgagttg tgcgtttaga attctgatta catgaaatgc tgtgtttgat
420
ctttgggccc aattcactgt tctttggcaa ataagaacta tttgcattcc aaggcagatg
480
acgatttctg tgaaaggagc ttagaggtac agctgtttcc ttctgttcag tcaagtgcca
540
gtttcataaa gtgcacctct gccctatcag ctttggggga agggtggcat atggggagga
600
agggatcatt gagaatacag ggtgaaaaag aacgacgtta ctgaaggtag acattgctag
660
tgcaaggtac ggaatccatg tgcaaaaggt ggctggaaca aatgttcaga taaggtgcga
720
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780
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1020
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tgcaagataa aggagggtca gctaaggaca tgaagcctgc agaaaaggct atcagatggc
1140
gcctgaactt aaggtgggag gccccttct agaaggcatc ccgggagcat ccaacagcaa
1200
tgtggcactt agggctgtgg gacaaacaag tggaagagtc ttttggagac gtggacccct
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1380
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1500
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1560
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1620
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1680
gtctctgaaa gtgttcaaat tggttgccaa catttataaa tggagagatg gcaccaaaaa
1740
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acatctaggt ttcttgtctc ttgaaaaatc aaagctgtgg ccaccctagg cccacttttc
1800
cacatggcaa caggcgtgga gctggggggct actgcccccta ctgtgtaggc ggtgggctcc
1860
ccatagtctc ctctgccctg ctgccgtgta cctggctccc ttcactcatc cacatcaccg
1920
gccctaggcc agggtctgaa ccacacacac agaatggctg cagtaagcag gaacgggaag
1980
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2040
tccagcactt caaccttact ctttcagagc tttggggtag caggcagcca gctagagcac
2100
actctctaag gaactcttga aagttgatgt ctaattttta agtactcatg aggtgatgga
2160
ggagaaacta actcagatga ctgcgatacg atacatcttt ccttataaga agtccttaaa
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2280
tgac
2284
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<210> 4680
<211> 112
<212> PRT
<213> Homo sapiens

<400> 4680
Met Arg Gly Ala His Thr Glu Arg Thr Thr Cys Ser Pro Pro Met Ala
1               5                   10                  15
Thr Ser Phe His Arg Gly Thr Cys Leu Glu Phe Trp His Arg Gly Leu
            20                  25                  30
Thr Glu His Ser Ser Asp Ile Phe Leu Gln Leu Glu Met Leu Cys Trp
        35                  40                  45
Ser Pro Cys Ser Leu Thr Phe Ser Arg Ala Ile Lys Ala Thr Ser Ser
    50                  55                  60
Ile Ala Gly Pro Gln Thr Phe Gln Gly Lys His Cys Phe Thr Ser Cys
65                  70                  75                  80
Arg Gln Leu Ile Ser Gln Lys Pro Leu Gln Lys Pro Val Leu Pro Gly
                85                  90                  95
Thr Ala Gly Ala Gly Val Cys Lys Ile Lys Glu Gly Gln Leu Arg Thr
            100                 105                 110
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<210> 4681
<211> 906
<212> DNA
<213> Homo sapiens

<400> 4681
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120
acagaagtct aggtactgta cattcactaa ggctccttgt ttttgcaaat cgcgtttatg
180
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acaaataacc ataaggcaaa cgaatctaaa ggaatggtta tgagtgtttc cagcgtacag
240
acaggtcttc cccctcgccc cacagtacag cataaaacca gtagcaccca caataacttt
300
tgtgttgttt tggggggact ctagaaaggt gaagttttct agatgtgtac aggaagggaa
360
aaaagaaaag ggaggaagaa aggaaaggtt tttttgtctg gtggtctgat ggaagaggaa
420
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480
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600
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660
cactgtctca agacactcag ggccaaatta agaacagaa aatgcaagag agatgagatg
720
cgtgcttctg ttgctgtgtt aaaggtgacc tctcccacag gtttctgtg cctgcctgca
780
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900
acgcgt
906

<210> 4682
<211> 153
<212> PRT
<213> Homo sapiens

<400> 4682
Met Gly Ser His Leu Phe Ile Ser Gly Phe Ser Tyr Asn Pro Val Phe
1   5   10   15
Lys Glu Met Leu Gln Lys Phe Lys Phe Ser His Val Tyr Phe Lys Gln
            20   25   30
Phe Leu Phe His Gln Thr Thr Arg Gln Lys Asn Leu Ser Phe Leu Pro
        35   40   45
Pro Phe Ser Phe Phe Pro Ser Cys Thr His Leu Glu Asn Phe Thr Phe
    50   55   60
Leu Glu Ser Pro Gln Asn Asn Thr Lys Val Ile Val Gly Ala Thr Gly
65   70   75   80
Phe Met Leu Tyr Cys Gly Ala Arg Gly Lys Thr Cys Leu Tyr Ala Gly
                85   90   95
Asn Thr His Asn His Ser Phe Arg Phe Val Cys Leu Met Val Ile Cys
            100   105   110
His Lys Arg Asp Leu Gln Lys Gln Gly Ala Leu Val Asn Val Gln Tyr
        115   120   125
Leu Asp Phe Cys Val Leu Arg Thr Gln Lys Gly Ala Thr Leu Leu Phe
    130   135   140
Gly Pro Val Ser Gly His Leu Val Ile
145   150

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<210> 4683
<211> 3246
<212> DNA
<213> Homo sapiens

<400> 4683
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120
cccgccccca aaacgatccc gcagcaaact catggcaccg cccgaatcgg gacgcacaat
180
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240
cgggatgcag agattgtgcg gacccgggat cccgaaaaac tcgcttcctg tgacatcgtg
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360
ttcacagaga ccatgagctc cctgtcccct gggaagccgt ggcagaccaa gctgagcagt
420
gcgggactca tctatctgca cttcgggcac aagctgctgg cccagttgct gggcactagt
480
gaagaggaca gcatggtggg caccctctat gacaagatgt atgagaactt tgtggaggag
540
gtggatgctg tggacaatgg gatctcccag tgggcagagg gggagcctcg atatgcactg
600
accactaccc tgagtgcacg agttgctcga cttaatccta cctggaacca ccccgaccaa
660
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720
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780
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1320
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1380
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1440
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3060
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ggtacc
3246

<210> 4684
<211> 385
<212> PRT
<213> Homo sapiens

<400> 4684
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Arg Pro Leu Asn Ala Ala Ala Ala Ala Ala Thr Pro Val Tyr Pro Ala
             20   25   30
Pro His Ala Arg Ser Arg Val Arg Pro Ala Pro Lys Thr Ile Pro Gln
         35   40   45
Gln Thr His Gly Thr Ala Arg Ile Gly Thr His Asn Gly Thr Phe His
     50   55   60
Cys Asp Glu Ala Leu Ala Cys Ala Leu Leu Arg Leu Leu Pro Glu Tyr
65   70   75   80
Arg Asp Ala Glu Ile Val Arg Thr Arg Asp Pro Glu Lys Leu Ala Ser
                 85   90   95
Cys Asp Ile Val Val Asp Val Gly Gly Glu Tyr Asp Pro Arg Arg His
             100   105   110
Arg Tyr Asp His His Gln Arg Ser Phe Thr Glu Thr Met Ser Ser Leu
         115   120   125
Ser Pro Gly Lys Pro Trp Gln Thr Lys Leu Ser Ser Ala Gly Leu Ile
     130   135   140
Tyr Leu His Phe Gly His Lys Leu Leu Ala Gln Leu Leu Gly Thr Ser
145   150   155   160
Glu Glu Asp Ser Met Val Gly Thr Leu Tyr Asp Lys Met Tyr Glu Asn
                 165   170   175
Phe Val Glu Glu Val Asp Ala Val Asp Asn Gly Ile Ser Gln Trp Ala
             180   185   190
Glu Gly Glu Pro Arg Tyr Ala Leu Thr Thr Thr Leu Ser Ala Arg Val
         195   200   205
Ala Arg Leu Asn Pro Thr Trp Asn His Pro Asp Gln Asp Thr Glu Ala
     210   215   220
Gly Phe Lys Arg Ala Met Asp Leu Val Gln Glu Glu Phe Leu Gln Arg
225   230   235   240
Leu Asp Phe Tyr Gln His Ser Trp Leu Pro Ala Arg Ala Leu Val Glu
                 245   250   255
Glu Ala Leu Ala Gln Arg Phe Gln Val Asp Pro Ser Gly Glu Ile Val
             260   265   270
Glu Leu Ala Lys Gly Ala Cys Pro Trp Lys Glu His Leu Tyr His Leu
         275   280   285
Glu Ser Gly Leu Ser Pro Pro Val Ala Ile Phe Phe Val Ile Tyr Thr
     290   295   300
Asp Gln Ala Gly Gln Trp Arg Ile Gln Cys Val Pro Lys Glu Pro His

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305                    310                    315                    320
Ser Phe Gln Ser Arg Leu Pro Leu Pro Glu Pro Trp Arg Gly Leu Arg
                325                    330                    335
Asp Glu Ala Leu Asp Gln Val Ser Gly Ile Pro Gly Cys Ile Phe Val
            340                    345                    350
His Ala Ser Gly Phe Ile Gly Gly His Arg Thr Arg Glu Gly Ala Leu
        355                    360                    365
Ser Met Ala Arg Ala Thr Leu Ala Gln Arg Ser Tyr Leu Pro Gln Ile
    370                    375                    380
Ser
385
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<210> 4685
<211> 618
<212> DNA
<213> Homo sapiens

<400> 4685
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120
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180
gggtgaagtg tgggctgctg aggactgagc gatcacccac atgtccacac agccagccgg
240
gccgcagctg atgcccgagg acgcgctgga caccggtctg cagccgcttc caacctctcc
300
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360
gtccagaaga actatgaaca cttatttaag gtgaatgata aatccgtggg tggctccttc
420
tacctgcagt caaaggtggt ccgcgcaaag gagcgcctgg atgaggaact caaaatccag
480
gcccaggagg acagagaaaa agggcagatg ccccatacgt gactgctcgg ctccccccgc
540
ccaccccgcc gcctctaatt tatagcttgg taataaattt cttttctgca aaaaaaagag
600
gctggagtgt gctcgcga
618
```

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<210> 4686
<211> 106
<212> PRT
<213> Homo sapiens

<400> 4686
Gly Leu Ser Asp His Pro His Val His Thr Ala Ser Arg Ala Ala Ala
1               5                   10                  15
Asp Ala Arg Gly Arg Ala Gly His Arg Ser Ala Ala Ala Ser Asn Leu
            20                  25                  30
Ser Gly Leu Ser Leu Gln Glu Ala Gln Gln Ile Leu Asn Val Ser Lys
        35                  40                  45
Leu Ser Pro Glu Glu Val Gln Lys Asn Tyr Glu His Leu Phe Lys Val
```

```
       50                  55                  60
Asn Asp Lys Ser Val Gly Gly Ser Phe Tyr Leu Gln Ser Lys Val Val
65                  70                  75                  80
Arg Ala Lys Glu Arg Leu Asp Glu Glu Leu Lys Ile Gln Ala Gln Glu
                85                  90                  95
Asp Arg Glu Lys Gly Gln Met Pro His Thr
            100                  105


<210> 4687
<211> 309
<212> DNA
<213> Homo sapiens


<400> 4687
acgcgtcggg gctgagccgg ggtccagcag ccgccgctat ggacatcccg ccgctggccg
60
gcaagatcgc ggcgctgtcg ctgagcgccc tcccggtgtc ctacgcgctc aaccacgtct
120
cggcgctctc gcacccctg tgggtggcat tgatgagcgc cctaatcctg ggtctgcttt
180
tcgtggcggt ctacagcttg tcccatggcg aggtctccta tgacccactc tatgctggct
240
tcgctgtctt cgccttcacc tcgggtgggg acctcatcat cgctcttcag gaagacagct
300
atgggggggg
309


<210> 4688
<211> 90
<212> PRT
<213> Homo sapiens


<400> 4688
Met Asp Ile Pro Pro Leu Ala Gly Lys Ile Ala Ala Leu Ser Leu Ser
 1               5                  10                  15
Ala Leu Pro Val Ser Tyr Ala Leu Asn His Val Ser Ala Leu Ser His
                20                  25                  30
Pro Leu Trp Val Ala Leu Met Ser Ala Leu Ile Leu Gly Leu Leu Phe
            35                  40                  45
Val Ala Val Tyr Ser Leu Ser His Gly Glu Val Ser Tyr Asp Pro Leu
        50                  55                  60
Tyr Ala Gly Phe Ala Val Phe Ala Phe Thr Ser Gly Gly Asp Leu Ile
65                  70                  75                  80
Ile Ala Leu Gln Glu Asp Ser Tyr Gly Gly
                85                  90


<210> 4689
<211> 898
<212> DNA
<213> Homo sapiens


<400> 4689
ncgccccgtc cctcgcgccg aatcgctccc ctggacggcg ctcggctggc cctgagcttg
60
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cgctggcgct ggcggacgcc ggactgtcca ccagcatcag cccccgagga cctgatgttc
120
ctgctggaca gctcagccag cgtctctcac tacgagttct cccgggttcg ggagtttgtg
180
gggcagctgg tggctccact gcccctggca ccgnnggccc tgcgtgccag tctggtgcac
240
gtgggcagtc ggccatacac cgagttcccc ttcggccagc acagctcggg tgaggctgcc
300
caggatgcgg tgcgtgcttc tgcccagcgc atgggtgaca cccacactgg cctggcgctg
360
gtctatgcca aggaacagct gtttgctgaa gcatcaggtg cccggccagg ggtgcccaaa
420
gtgctggtgt gggtgacaga tggcggctcc agcgaccctg tgggcccccc catgcaggag
480
ctcaaggacc tgggcgtcac cgtgttcatt gtcagcaccg gccgaggcaa cttcctggag
540
ctgtcagccg ctgcctcagc ccctgccgag aagcacctgc actttgtgga cgtggatgac
600
ctgcacatca ttgtccaaga gctgaggggc tccattctcg acgcgatgcg gccacagcag
660
ctccatgcca cggagatcac gtccagcggc ttccgcctgg cctggccacc cctgctgacc
720
gcagactcgg gctactatgt gctggagctg gtgcccagcg cccagccggg ggctgcaaga
780
cgccagcagc tgccagggaa cgccacggac tggatctggg ccggcctcga cccggacacg
840
gactacgacg tggcgctagt gcctgagtcc aacgtgcgcc tcctgaggcc ccagatct
898
```

<210> 4690
<211> 299
<212> PRT
<213> Homo sapiens

<400> 4690

```
Xaa Pro Arg Pro Ser Arg Arg Ile Ala Pro Leu Asp Gly Ala Arg Leu
1               5                   10                  15
Ala Leu Ser Leu Arg Trp Arg Trp Arg Thr Pro Asp Cys Pro Pro Ala
            20                  25                  30
Ser Ala Pro Glu Asp Leu Met Phe Leu Leu Asp Ser Ser Ala Ser Val
        35                  40                  45
Ser His Tyr Glu Phe Ser Arg Val Arg Glu Phe Val Gly Gln Leu Val
    50                  55                  60
Ala Pro Leu Pro Leu Ala Pro Xaa Ala Leu Arg Ala Ser Leu Val His
65                  70                  75                  80
Val Gly Ser Arg Pro Tyr Thr Glu Phe Pro Phe Gly Gln His Ser Ser
                85                  90                  95
Gly Glu Ala Ala Gln Asp Ala Val Arg Ala Ser Ala Gln Arg Met Gly
            100                 105                 110
Asp Thr His Thr Gly Leu Ala Leu Val Tyr Ala Lys Glu Gln Leu Phe
        115                 120                 125
Ala Glu Ala Ser Gly Ala Arg Pro Gly Val Pro Lys Val Leu Val Trp
        130                 135                 140
Val Thr Asp Gly Gly Ser Ser Asp Pro Val Gly Pro Pro Met Gln Glu
```

```
145                      150                      155                      160
Leu Lys Asp Leu Gly Val Thr Val Phe Ile Val Ser Thr Gly Arg Gly
                165                      170                      175
Asn Phe Leu Glu Leu Ser Ala Ala Ala Ser Ala Pro Ala Glu Lys His
                180                      185                      190
Leu His Phe Val Asp Val Asp Asp Leu His Ile Ile Val Gln Glu Leu
            195                      200                      205
Arg Gly Ser Ile Leu Asp Ala Met Arg Pro Gln Gln Leu His Ala Thr
        210                      215                      220
Glu Ile Thr Ser Ser Gly Phe Arg Leu Ala Trp Pro Pro Leu Leu Thr
225                      230                      235                      240
Ala Asp Ser Gly Tyr Tyr Val Leu Glu Leu Val Pro Ser Ala Gln Pro
                245                      250                      255
Gly Ala Ala Arg Arg Gln Gln Leu Pro Gly Asn Ala Thr Asp Trp Ile
                260                      265                      270
Trp Ala Gly Leu Asp Pro Asp Thr Asp Tyr Asp Val Ala Leu Val Pro
            275                      280                      285
Glu Ser Asn Val Arg Leu Leu Arg Pro Gln Ile
    290                      295
```

```
<210> 4691
<211> 2375
<212> DNA
<213> Homo sapiens

<400> 4691
ntggatctga aagccaaaat gccagatgac catgcacgaa aaattttgct ttcccgtatt
60
aataactata ctatcccaga agaagaaatt gggtctttct tatttcatgc tattaataag
120
ccaaatgctc ctatctggct catactcaat gaagctggac tatactggag agcagtagga
180
aatagcactt ttgctattgc ctgtcttcag agggctttga atttagctcc acttcaatac
240
caagatgttc ctcttgtcaa cttggccaac cttttgattc attacggcct tcatcttgat
300
gccactaagc tgctacttca agctttggcc atcaatagct ctgagcctct gacctttttg
360
agcctgggaa atgcttacct tgctctgaag aatatcagtg gggcacttga ggcctttaga
420
caggccttga aattaaccac caaatgtcca gagtgtgaaa acagcctgaa gttgatccgc
480
tgtatgcagt tttatccttt tctgtacaac atcacttctt ctgtttgcag tggtaattgt
540
catgagaaaa ccctggacaa cagccatgac aaacagaaat attttgacaa ctcacagtca
600
ctggatgctg ctgaagaaga gccctctgag agaggaacag aggaggaccc tgtattctct
660
gttgagaatt cagggaggga ctcagatgcc cttagacttg aaagtacggt ggttgaggag
720
agcaatggtt ctgatgagat ggagaattca gatgaaacca aaatgtcaga gaaatactg
780
gctttggtgg atgaatttca acaggcatgg cctttggaag gctttggggg tgcactagag
840
```

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atgaaagggc ggcgtctaga cttacaagga atacgggtgc tgaagaaagg tccccaggat
900
ggagtggcca gaagctcttg ctatggagac tgcagaagtg aagatgatga agcaacagaa
960
tggattacat tccaggtcaa acgtgtaaag aaacccaaag gagatcataa gaaaactcct
1020
gggaaaaaag tagaaacagg tcagatagaa aatggacatc gttaccaagc aaacctagag
1080
atcactggcc ccaaggtggc atctcctggg ccacaagggc tactagactg gaagaccagg
1140
aaagtgccat agacataatg taactggatt tcagcaaggc atttaacaga gcctcttatg
1200
atatccttgt gaaccagatg gagagatgtg ggcttgaagc cttcccattg cctacaggat
1260
aaaattcaaa cttcctagtg tggtgtacaa gaccctttac agcccgcctc tgtgtaccct
1320
tcaacaccat tctctgaacc aaccatgctc atgtttttac ctcagtgcct ttgcacatgc
1380
tattccctct gcctggaatg ccctgtgccc cctctgccct ctgccgtgct aaaatatcac
1440
tcatccttaa acttcaaaat caagtgccat ctcttccttg ttaccttcag gcagaattaa
1500
ttactctttc ctctgtgcaa ttgttctata tcttcgctct agctcttttc ctgttgtatt
1560
gtaatgattt gtttatgttt accttcctta ctagactgtg agctcaagag caggccgtct
1620
taattattcc tttctgtacc cctagtgtct tttatggttc tcagcccctt ataacaggtg
1680
ctcaataaat atttttcaaa tgaaattatt aaatgtaaaa gaaaattaag attttttgtg
1740
aaaattatgg cttatttaag ttattaattt aaacagagtt aatttgaaac tcttccaaaa
1800
ctgttccttt ctgttttgtt aaaatctcaa tctaaacccc tgcctgtacc tcaaacagtt
1860
ttctactgtt cgtaaattcc tataatataa aaagcgctat acagaactaa agttctcctt
1920
cctgcctatt ccattataac tccttcagaa aacccttccc agacaagaca gttctgctct
1980
tttcttgggg gatttgatgt aagtaaaggg cccacaccca aaaggtgggt acttacgaag
2040
gatattaata aacagagctt taaatttttt tgtagcttta aatagcttgt tgattgggaa
2100
catacacgtt agagtcaaac agactcctag tctgccagtt gctagccagg tgacctggac
2160
aagtcactta gtctctctga gtctctgttt tctcatctga gaaatgaggg ttaaaaccta
2220
cttcaggcca gatgcagtgg ctcacatctg taatcccagc actttgggag gccagggtgg
2280
gaggatcact tgagtccagg aggttaaggc tccagaaagc tagtatcatc cacggactct
2340
acctgggcaa gaaagcaagg tgctgtctct aactt
2375
```

<210> 4692

<211> 383
<212> PRT
<213> Homo sapiens

<400> 4692
```
Xaa Asp Leu Lys Ala Lys Met Pro Asp Asp His Ala Arg Lys Ile Leu
1               5                   10                  15
Leu Ser Arg Ile Asn Asn Tyr Thr Ile Pro Glu Glu Glu Ile Gly Ser
                20                  25                  30
Phe Leu Phe His Ala Ile Asn Lys Pro Asn Ala Pro Ile Trp Leu Ile
            35                  40                  45
Leu Asn Glu Ala Gly Leu Tyr Trp Arg Ala Val Gly Asn Ser Thr Phe
        50                  55                  60
Ala Ile Ala Cys Leu Gln Arg Ala Leu Asn Leu Ala Pro Leu Gln Tyr
65                  70                  75                  80
Gln Asp Val Pro Leu Val Asn Leu Ala Asn Leu Leu Ile His Tyr Gly
                85                  90                  95
Leu His Leu Asp Ala Thr Lys Leu Leu Leu Gln Ala Leu Ala Ile Asn
            100                 105                 110
Ser Ser Glu Pro Leu Thr Phe Leu Ser Leu Gly Asn Ala Tyr Leu Ala
        115                 120                 125
Leu Lys Asn Ile Ser Gly Ala Leu Glu Ala Phe Arg Gln Ala Leu Lys
    130                 135                 140
Leu Thr Thr Lys Cys Pro Glu Cys Glu Asn Ser Leu Lys Leu Ile Arg
145                 150                 155                 160
Cys Met Gln Phe Tyr Pro Phe Leu Tyr Asn Ile Thr Ser Ser Val Cys
                165                 170                 175
Ser Gly Asn Cys His Glu Lys Thr Leu Asp Asn Ser His Asp Lys Gln
            180                 185                 190
Lys Tyr Phe Asp Asn Ser Gln Ser Leu Asp Ala Ala Glu Glu Glu Pro
        195                 200                 205
Ser Glu Arg Gly Thr Glu Glu Asp Pro Val Phe Ser Val Glu Asn Ser
    210                 215                 220
Gly Arg Asp Ser Asp Ala Leu Arg Leu Glu Ser Thr Val Val Glu Glu
225                 230                 235                 240
Ser Asn Gly Ser Asp Glu Met Glu Asn Ser Asp Glu Thr Lys Met Ser
                245                 250                 255
Glu Glu Ile Leu Ala Leu Val Asp Glu Phe Gln Gln Ala Trp Pro Leu
            260                 265                 270
Glu Gly Phe Gly Gly Ala Leu Glu Met Lys Gly Arg Arg Leu Asp Leu
        275                 280                 285
Gln Gly Ile Arg Val Leu Lys Lys Gly Pro Gln Asp Gly Val Ala Arg
    290                 295                 300
Ser Ser Cys Tyr Gly Asp Cys Arg Ser Glu Asp Asp Glu Ala Thr Glu
305                 310                 315                 320
Trp Ile Thr Phe Gln Val Lys Arg Val Lys Lys Pro Lys Gly Asp His
                325                 330                 335
Lys Lys Thr Pro Gly Lys Lys Val Glu Thr Gly Gln Ile Glu Asn Gly
            340                 345                 350
His Arg Tyr Gln Ala Asn Leu Glu Ile Thr Gly Pro Lys Val Ala Ser
        355                 360                 365
Pro Gly Pro Gln Gly Leu Leu Asp Trp Lys Thr Arg Lys Val Pro
    370                 375                 380
```

<210> 4693
<211> 794
<212> DNA
<213> Homo sapiens

<400> 4693
tccggaagtg ccttcgccct ccgtaaagat ggccgggggca gtcggcacga gggaggcggg
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gatgcgcctg cgcaacaagt tcggcgggga agatggcgga tgacaaggat tctctgccta
120
agcttaagga cctggcattt ctcaagaacc agctggaaag cctgcagcgg cgtgtagaag
180
acgaagtcaa cagtggagtg ggccaggatg gctcgctgtt gtcctccccg ttcctcaagg
240
gattcctggc tggctatgtg gtggccaaac tgagggcatc agcagtattg ggctttgctg
300
tgggcacctg cactggcatc tatgcggctc aggcatatgc tgtgcccaac gtggagaaga
360
cattaaggga ctatttgcag ttgctacgca aggggcccga ctagctctag gtgccatgga
420
agaggcagga tgagcagctc agccttcagg tggagacact ttatctggat tccccagctg
480
tcatccattt gctatctcca actttcctgc caccttcatc cttgcctccc ttcctgcaga
540
ttgtggacag tagttcctca gcctgcaccc tggattcctt cttccccttc ctagctccat
600
gggactcgcc ccaagactgt ggcttcaagg accaccagcc ccttactctt caagccctga
660
ctgtggagtt ggtagatgcc tctgatcctc agtattctct ctggcaatgt tccacggctt
720
ctccttcctg ggagctggct ccataacttg attttcccca aacgtgttgc aatccctgct
780
gccccttcac gcgt
794

<210> 4694
<211> 103
<212> PRT
<213> Homo sapiens

<400> 4694
Met Ala Asp Asp Lys Asp Ser Leu Pro Lys Leu Lys Asp Leu Ala Phe
1   5   10   15
Leu Lys Asn Gln Leu Glu Ser Leu Gln Arg Arg Val Glu Asp Glu Val
            20   25   30
Asn Ser Gly Val Gly Gln Asp Gly Ser Leu Leu Ser Ser Pro Phe Leu
        35   40   45
Lys Gly Phe Leu Ala Gly Tyr Val Val Ala Lys Leu Arg Ala Ser Ala
    50   55   60
Val Leu Gly Phe Ala Val Gly Thr Cys Thr Gly Ile Tyr Ala Ala Gln
65   70   75   80
Ala Tyr Ala Val Pro Asn Val Glu Lys Thr Leu Arg Asp Tyr Leu Gln
                85   90   95
Leu Leu Arg Lys Gly Pro Asp

100

<210> 4695
<211> 2209
<212> DNA
<213> Homo sapiens

<400> 4695
nngtgcactg cccacctcct agcctttgcc tgccattccc aggtcctcct gtccctgcca
60
gaatacaccc ttctttcaac ggctattcaa agatcacctg gctgcaaagc tttcttttcct
120
cgcctgtgct tcctccttaa ctatctctag ttaaagctat ctccaccacc aggccacaag
180
ctcccagaga acagagatcg tgtttttcat tattctgtcc atttccatcc cccactcccg
240
cccacttact gtgtgagtcc agcactgtgt gagtccttga taaaaacgat gagcaaatcc
300
ccaggccttg agtgggtcag cagtgaccac atctatccgc agggatccac ggggaagctg
360
gtgtgcgccg gataaaggta ggtggtccct ctggcacagg ccgccctaag gccaaggccc
420
cccagatgca gctcattcct ggctccctct gacagatggc aaccgccgat gagattgtga
480
aactcatgct cgaccacatg acaaacacca ccaacgcgtc ccatgtgcct gtgcagcccg
540
gtgggtagcc tctcgcccgc gtctcccaac ccctcctaca cctctgggga ggagacgccc
600
agagggtctc acctggggtg tcatgtctac ccgcaggctc ctcagttgtg atgatggtca
660
acaacctggg tggcctgtca ttcctggaac tgggcatcat agccgacgct accgtccgct
720
ccctggggaa cgtggtcatt tgtggggtta ttgagggatg cctgccagga ggaaatcagg
780
acatctccct cccgacctca gagccccagc ttccaaggtc cttgcttttc tgttgttttc
840
tttccctgat gcccattttt cccttttgga ctgccacact ctggtattgc agagggccgc
900
ggggtgaaga ttgcccgtgc cctggtgggc accttcatgt cagcactgga gatgcctggc
960
atttctctca ccctcctgct ggtggatgag cctctcctga aactgataga tgctgaaacc
1020
actgcagcag cctggcctaa cgtggctgca gtctccatta ctgggcggaa gcggagccgg
1080
gtagcccctg ccgagcccca ggaggcccct gattccactg ctgcanngga ggctcagcct
1140
cgaagcngga tggcgctggt gctggaacgg gtgtgcagca ctctcctggg cctggaggaa
1200
cacctgaatg ccctggaccg ggctgctggt gacggcgact gtggcaccac ccacagccgt
1260
gcggccagag caatccagga gtggctgaag gagggcccac ccctgccag ccctgcccag
1320
ctgctctcca agttgtctgt tctgctcctg gagaagatgg gaggctcatc tggggcgctc
1380

```
tatggcctgt tcctgactgc ggctgcacag cccctgaagg ccaagaccag cctcccagcc
1440
tggtctgctg ccatggatgc cggcctggaa gccatgcaga agtatggcaa ggctgctcca
1500
ggggacagga ctatgctgga ttctctgtgg gcagcggagc aggagctcca agcctggaag
1560
agcccaggag ctgatctgtt acaagtcctg accaaagcag tcaagagtgc cgaagctgca
1620
gccgaggcca ccaagaatat ggaagctgga gccggaagag ccagttatat cagctcagca
1680
cggctggagc agccagaccc cggggcggtg gcagctgctg ccatcctccg ggccatcttg
1740
gaggtcttgc agagctaggg tgtgtgactg cctcccttgg cctcagctcc tctcactgct
1800
gtgctgaggt ggcctttgtc acttccttct gccttccaac cctcaccttc ccccggcctg
1860
gccccattgg ccaacagaga atccagcata gtcctgtccc ctggagcagc cttgccatac
1920
ttctgcatgg cttccaggcc ggcatccatg gcagcagacc aggctggtgt ggggctggag
1980
gagatcgcaa agcaggtgaa cgtggtcacc aaggccatgg gtaccctggg ggtgagctta
2040
tcctcctgca gcgtccctgg ttccaaaccc accttcgagc tctcagccga cgaggtggag
2100
ctgggcctgg ggatccacgg ggaagctggt gtgcgccgga taaagatggc aaccgccgat
2160
gagattgtga aactcatgct cgaccacatg acaaacacca ccaacgcgt
2209


<210> 4696
<211> 302
<212> PRT
<213> Homo sapiens

<400> 4696
Cys Pro Phe Phe Pro Phe Gly Leu Pro His Ser Gly Ile Ala Glu Gly
1               5                   10                  15
Arg Gly Val Lys Ile Ala Arg Ala Leu Val Gly Thr Phe Met Ser Ala
                20                  25                  30
Leu Glu Met Pro Gly Ile Ser Leu Thr Leu Leu Val Asp Glu Pro
            35                  40                  45
Leu Leu Lys Leu Ile Asp Ala Glu Thr Thr Ala Ala Ala Trp Pro Asn
        50                  55                  60
Val Ala Ala Val Ser Ile Thr Gly Arg Lys Arg Ser Arg Val Ala Pro
65                  70                  75                  80
Ala Glu Pro Gln Glu Ala Pro Asp Ser Thr Ala Ala Xaa Glu Ala Gln
                85                  90                  95
Pro Arg Ser Xaa Met Ala Leu Val Leu Glu Arg Val Cys Ser Thr Leu
            100                 105                 110
Leu Gly Leu Glu Glu His Leu Asn Ala Leu Asp Arg Ala Ala Gly Asp
        115                 120                 125
Gly Asp Cys Gly Thr Thr His Ser Arg Ala Ala Arg Ala Ile Gln Glu
        130                 135                 140
Trp Leu Lys Glu Gly Pro Pro Pro Ala Ser Pro Ala Gln Leu Leu Ser
```

```
145                      150                     155                     160
Lys Leu Ser Val Leu Leu Leu Glu Lys Met Gly Gly Ser Ser Gly Ala
                    165                     170                     175
Leu Tyr Gly Leu Phe Leu Thr Ala Ala Ala Gln Pro Leu Lys Ala Lys
            180                     185                     190
Thr Ser Leu Pro Ala Trp Ser Ala Ala Met Asp Ala Gly Leu Glu Ala
        195                     200                     205
Met Gln Lys Tyr Gly Lys Ala Ala Pro Gly Asp Arg Thr Met Leu Asp
    210                     215                     220
Ser Leu Trp Ala Ala Glu Gln Glu Leu Gln Ala Trp Lys Ser Pro Gly
225                     230                     235                     240
Ala Asp Leu Leu Gln Val Leu Thr Lys Ala Val Lys Ser Ala Glu Ala
            245                     250                     255
Ala Ala Glu Ala Thr Lys Asn Met Glu Ala Gly Ala Gly Arg Ala Ser
        260                     265                     270
Tyr Ile Ser Ser Ala Arg Leu Glu Gln Pro Asp Pro Gly Ala Val Ala
    275                     280                     285
Ala Ala Ala Ile Leu Arg Ala Ile Leu Glu Val Leu Gln Ser
    290                     295                     300
```

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<210> 4697
<211> 1047
<212> DNA
<213> Homo sapiens
```

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<400> 4697
gctgaatatt gaaattgcct caggtacctc atttctgatt tgtccattat aattttgtat
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tggaaagtga ttggtgacaa attttttata atgcatcatt gtgcgtccct gtatgcatac
120
taccttgtac tgaaaaatgg agtgctggca tacattggga attttcgcct gcttgcagag
180
catttccagc ccgtttgntg aatcagcgac caaaggctgt agtcactgga aacatggact
240
tgttttcatc tctaactctc cacctctcca cactcagcct gcagagcccg gccaacaatc
300
aagacagatg ggaccgtgtt cagaattcac acaaaagctg aaggatttat ggatgcggat
360
atacctctgg aattggtgtt ccatttgcca gtcaattatc cttcatgtct acctggtatc
420
tcgattaact ctgaacagtt gaccagggcc cagtgtgtga ctgtgaaaga gaagttactt
480
gagcaagcag agagcctttt gtcggagcct atggttcatg agctggttct ctggattcag
540
cagaatctca ggcatatcct cagccaacca gaaactggca gtggcagtga aaagtgtact
600
tttttcaacaa gcacgaccat ggatgatgga ttgtggataa ctcttttgca tttagatcac
660
atgagagcaa agactaaata tgtcaaaatt gtggagaagt gggcttcaga tttaaggctg
720
acaggaagac tgatgttcat gggtaaaata atactgattt tactacaggg agacagaaac
780
aacctcaagg tgccaaaaag ttaaatgttg agtatgaatc tggctatttt ctgctttaaa
840
```

```
tggtgtgtct ttaagtgtgt tttataacaa tgggatagat taattattaa gatgtttctg
900
ctttcattat tacaacctta atggatcttc cttttctttt taaagaatgt ctgactgcta
960
attacaagta caaacttgca aagcttgaag aataagattg cattttaaaa atcatgtcac
1020
ttaataaagt gacaggttat ttaaaaa
1047
```

<210> 4698
<211> 182
<212> PRT
<213> Homo sapiens

<400> 4698
```
Leu Ser Thr Ser Pro His Ser Ala Cys Arg Ala Arg Pro Thr Ile Lys
 1               5                  10                  15
Thr Asp Gly Thr Val Phe Arg Ile His Thr Lys Ala Glu Gly Phe Met
                20                  25                  30
Asp Ala Asp Ile Pro Leu Glu Leu Val Phe His Leu Pro Val Asn Tyr
             35                  ·40                  45
Pro Ser Cys Leu Pro Gly Ile Ser Ile Asn Ser Glu Gln Leu Thr Arg
         50                  55                  60
Ala Gln Cys Val Thr Val Lys Glu Lys Leu Leu Glu Gln Ala Glu Ser
65                  70                  75                  80
Leu Leu Ser Glu Pro Met Val His Glu Leu Val Leu Trp Ile Gln Gln
                85                  90                  95
Asn Leu Arg His Ile Leu Ser Gln Pro Glu Thr Gly Ser Gly Ser Glu
            100                 105                 110
Lys Cys Thr Phe Ser Thr Ser Thr Thr Met Asp Asp Gly Leu Trp Ile
        115                 120                 125
Thr Leu Leu His Leu Asp His Met Arg Ala Lys Thr Lys Tyr Val Lys
        130                 135                 140
Ile Val Glu Lys Trp Ala Ser Asp Leu Arg Leu Thr Gly Arg Leu Met
145                 150                 155                 160
Phe Met Gly Lys Ile Ile Leu Ile Leu Leu Gln Gly Asp Arg Asn Asn
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Leu Lys Val Pro Lys Ser
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<210> 4699
<211> 1441
<212> DNA
<213> Homo sapiens

<400> 4699
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gtgtgattac atttctacac atatacaata tgcatatgtg agtttacaaa ttttaattaa
120
taagtcattt cacctcggag accgaaaaaa tgatcaaaaa gaaactatga gtaacaagct
180
ataacatagt tcaccacaat gggacccccc cccccttttt ctcaccctac agttagtaat
240
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attacaatta aaataactat attcttctat attttttctg ttaaaatcat ctcataaatt
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tacaatgcta ttattagttt ccaagactaa tataaattca ctccattttt ctacaacgaa
360
aatgattaat ttagaagcac acgacgtcat gatgaaaaac acaagcattt tagtagcaag
420
gacttgatca gttaagaatt agttttcttg taaaacattc taaagccaag taaaatatcc
480
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540
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720
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1260
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1320
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1440
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1441

<210> 4700
<211> 116
<212> PRT
<213> Homo sapiens

<400> 4700
Met Asp Thr Ile Phe Gly Asn Val Thr Glu Tyr Gln Arg Leu Gln Leu
1               5                   10                  15
Ser Thr Arg Gly Gln Ser Lys Thr Gly Trp Lys Leu Pro Val Thr Leu
            20                  25                  30
Ile Cys Cys Pro Arg His Pro Leu Met Arg Leu Lys Leu Gly Pro Ser
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```
            35                      40                      45
Glu Thr Ala Ala Ala Pro Tyr Arg Ala Cys Trp Leu Cys Arg Gly Glu
        50                      55                      60
Val Asp Asp Lys Gly Thr Arg His Ala Ser Ala Pro Cys Val Arg Ser
65                      70                      75                      80
Gly Leu Gly His Ser Pro Cys Thr Ser Lys Thr Pro Val Leu Thr Pro
                85                      90                      95
Thr Ser Lys Glu Leu Leu Leu Leu Ile Cys Lys Ala Ile Leu Leu Leu
                100                     105                     110
Ser Asn Leu Val
            115
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<210> 4701
<211> 812
<212> DNA
<213> Homo sapiens

<400> 4701
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120
cctggccatt tttttcttga dacaaggtct tattctctcg ccaagaatgg agtgcagtgg
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tgcaatgttg gctcactgca gcccaaacct cctgggctta agtgatcctc ctacctcagc
240
ctctcgagta gcnaggacca caggcgcnca ccatcacacc cagctaatgt tttattcttc
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480
tgctgcctct cagccacctg ccagccctgt tttatgaata tgtttaccgt ggctgtcact
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600
atggactcca agacggtctg acggtgctcg gacgccttca ggcggatctg ctcgcggatg
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720
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780
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812
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<210> 4702
<211> 69
<212> PRT
<213> Homo sapiens

<400> 4702
Arg Gln Gly Phe Thr Leu Thr Arg Met Ile Ser Ile Ser Gly Pro Arg
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 1                5                    10                   15
Asp Pro Pro Thr Ser Ala Ser Glu Asn Ala Gly Ile Thr Gly Leu Ser
            20                   25                   30
His Xaa Pro Pro Gly His Phe Phe Leu Glu Thr Arg Ser Tyr Ser Leu
        35                   40                   45
Ala Lys Asn Gly Val Gln Trp Cys Asn Val Gly Ser Leu Gln Pro Lys
    50                   55                   60
Pro Pro Gly Leu Lys
65


<210> 4703
<211> 513
<212> DNA
<213> Homo sapiens


<400> 4703
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120
cgaagagtct tcgaagggtt gccgcttttc ggtggcgcag ttctcgcgag aaggaaaatg
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300
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360
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420
ttgacaagac tccatcaact gaaactttta ggtcatactt tagtcgttga atttgcaaaa
480
gagcaagatc gagttcactc cccatgtccc act
513


<210> 4704
<211> 112
<212> PRT
<213> Homo sapiens


<400> 4704
Met Ala Ala Pro Glu Gln Pro Leu Ala Ile Ser Arg Gly Cys Thr Ser
 1                5                    10                   15
Ser Ser Ser Leu Ser Pro Pro Arg Ala Asp Arg Thr Leu Leu Val Arg
            20                   25                   30
His Leu Pro Ala Glu Leu Thr Ala Glu Glu Lys Glu Asp Leu Leu Lys
        35                   40                   45
Tyr Phe Gly Ala Gln Ser Val Arg Val Leu Ser Asp Lys Gly Arg Leu
    50                   55                   60
Lys His Thr Ala Phe Ala Thr Phe Pro Asn Glu Lys Ala Ala Ile Lys
65                   70                   75                   80
Ala Leu Thr Arg Leu His Gln Leu Lys Leu Leu Gly His Thr Leu Val
            85                   90                   95
Val Glu Phe Ala Lys Glu Gln Asp Arg Val His Ser Pro Cys Pro Thr
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                    100   105   110

<210> 4705
<211> 569
<212> DNA
<213> Homo sapiens

<400> 4705
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120
gaaggatgga aaggacccag gagcgataac agtaaatcaa ataagatatt tgtcggtgga
180
attcctcaca attgtggtga cacagagctc agggaatact tcaagaagtt cggagtggtc
240
acggaggtag tcatgatcta tgacgccgag aagcagaggc cccgaggtaa gggcagatct
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360
gcacacacag gtggcggctg tagcaaacag cctcaggaag ggacgatttg gagacaaatg
420
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569

<210> 4706
<211> 154
<212> PRT
<213> Homo sapiens

<400> 4706
Arg Thr Arg Pro Lys Glu Gly Trp Lys Gly Pro Arg Ser Asp Asn Ser
1   5   10   15
Lys Ser Asn Lys Ile Phe Val Gly Gly Ile Pro His Asn Cys Gly Glu
            20   25   30
Thr Glu Leu Arg Glu Tyr Phe Lys Lys Phe Gly Val Val Thr Glu Val
        35   40   45
Val Met Ile Tyr Asp Ala Glu Lys Gln Arg Pro Arg Gly Lys Gly Arg
    50   55   60
Ser Ser Leu Thr Ser Ala Phe Ser Leu Leu Pro Gln Met Ala Asn
65   70   75   80
Tyr Leu Thr Arg Gln Ala His Thr Gly Gly Gly Cys Ser Lys Gln Pro
                85   90   95
Gln Glu Gly Thr Ile Trp Arg Gln Met Thr Lys Thr Trp Ala Pro His
            100   105   110
Val His Pro Ile Gln Pro Val Cys Ala Ser Arg Gly Gln Thr Ser His
        115   120   125
Ile Val Phe Trp Leu Val Leu Leu Lys Phe Leu Arg Leu Val Met Ser
    130   135   140
Leu Gly Leu Ala Ser Val Phe His Cys Pro

145   150

<210> 4707
<211> 748
<212> DNA
<213> Homo sapiens

<400> 4707
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180
tcgaagggtt gccgcttttc ggtggcgcag ttctcgcgag aaggtgactt tctttctcgg
240
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360
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420
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480
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540
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600
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720
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748

<210> 4708
<211> 128
<212> PRT
<213> Homo sapiens

<400> 4708
Met Ala Ala Pro Glu Gln Pro Leu Ala Ile Ser Arg Gly Cys Thr Ser
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Ser Ser Ser Leu Ser Pro Pro Arg Gly Asp Arg Thr Leu Leu Val Arg
                20   25   30
His Leu Pro Ala Glu Leu Thr Ala Glu Glu Lys Glu Asp Leu Leu Lys
            35   40   45
Tyr Phe Gly Ala Gln Ser Val Arg Val Leu Ser Asp Lys Gly Arg Leu
        50   55   60
Lys His Thr Ala Phe Ala Thr Phe Pro Asn Glu Lys Ala Ala Ile Lys
65   70   75   80
Ala Leu Thr Arg Leu His Gln Leu Lys Leu Leu Gly His Thr Leu Val
                85   90   95
Val Glu Phe Ala Lys Glu Gln Asp Arg Val His Ser Pro Cys Pro Thr

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                  100               105               110
     Ser Gly Ser Glu Lys Lys Lys Met Ser Asp Asp Pro Val Glu Asp Asp
         115               120               125
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<210> 4709
<211> 1351
<212> DNA
<213> Homo sapiens

<400> 4709

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240
aaaaccacca accagtctcg aggctttggg tttgtcaaat ttaaagaccc aaactgtgtg
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720
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1080
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1200
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1351

<210> 4710
<211> 304
<212> PRT
<213> Homo sapiens

<400> 4710
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Leu Asp Trp Ser Thr Thr Gln Glu Thr Leu Arg Ser Tyr Phe Ser Gln
            20   25   30
Tyr Gly Glu Val Val Asp Cys Val Ile Met Lys Asp Lys Thr Thr Asn
        35   40   45
Gln Ser Arg Gly Phe Gly Phe Val Lys Phe Lys Asp Pro Asn Cys Val
    50   55   60
Gly Thr Val Leu Ala Ser Arg Pro His Thr Leu Asp Gly Arg Asn Ile
65   70   75   80
Asp Pro Lys Pro Cys Thr Pro Arg Gly Met Gln Pro Glu Arg Thr Arg
                85   90   95
Pro Lys Glu Gly Trp Gln Lys Gly Pro Arg Ser Asp Asn Ser Lys Ser
            100   105   110
Asn Lys Ile Phe Val Gly Gly Ile Pro His Asn Cys Gly Glu Thr Glu
            115   120   125
Leu Arg Glu Tyr Phe Lys Lys Phe Gly Val Val Thr Glu Val Val Met
            130   135   140
Ile Tyr Asp Ala Glu Lys Gln Arg Pro Arg Gly Phe Gly Phe Ile Thr
145   150   155   160
Phe Glu Asp Glu Gln Ser Val Asp Gln Ala Val Asn Met His Phe His
                165   170   175
Asp Ile Met Gly Lys Lys Val Glu Val Lys Arg Ala Glu Pro Arg Asp
                180   185   190
Ser Lys Ser Gln Ala Pro Gly Gln Pro Gly Ala Ser Gln Trp Gly Ser
            195   200   205
Arg Val Val Pro Asn Ala Ala Asn Gly Trp Ala Gly Gln Pro Pro Pro
    210   215   220
Thr Trp Gln Gln Gly Tyr Gly Pro Gln Gly Met Trp Val Pro Ala Gly
225   230   235   240
Gln Ala Ile Gly Gly Tyr Gly Pro Pro Ala Gly Arg Gly Ala Pro
            245   250   255
Pro Pro Pro Pro Pro Phe Thr Ser Tyr Ile Val Ser Thr Pro Pro Gly
            260   265   270
Gly Phe Pro Pro Pro Gln Gly Phe Pro Gln Gly Tyr Gly Ala Pro Pro
            275   280   285
Gln Phe Ser Phe Gly Tyr Gly Pro Pro Pro Pro Pro Gly Ser Arg
    290   295   300

<210> 4711
<211> 2061
<212> DNA
<213> Homo sapiens

<400> 4711

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1620
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3894

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2061

<210> 4712
<211> 187
<212> PRT
<213> Homo sapiens

<400> 4712
Met Ser Glu Met Ala Glu Leu Ser Glu Leu Tyr Glu Glu Ser Ser Asp
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Leu Gln Met Asp Val Met Pro Gly Glu Gly Asp Leu Pro Gln Met Glu
            20   25   30
Val Gly Ser Gly Ser Arg Glu Leu Ser Leu Arg Pro Ser Arg Ser Gly
        35   40   45
Ala Gln Gln Leu Glu Glu Glu Gly Pro Met Glu Glu Glu Ala Gln
    50   55   60
Pro Met Ala Ala Pro Glu Gly Lys Arg Ser Leu Ala Asn Gly Pro Asn
65   70   75   80
Ala Gly Glu Gln Pro Gly Gln Val Ala Gly Ala Asp Phe Glu Ser Glu
                85   90   95
Asp Glu Gly Glu Glu Phe Asp Asp Trp Glu Asp Asp Tyr Asp Tyr Pro
            100   105   110
Glu Glu Glu Gln Leu Ser Gly Ala Gly Tyr Arg Val Ser Ala Ala Leu
        115   120   125
Glu Glu Ala Asp Lys Met Phe Leu Arg Thr Arg Glu Pro Ala Leu Asp
        130   135   140
Gly Gly Phe Gln Met His Tyr Glu Lys Thr Pro Phe Asp Gln Leu Ala
145   150   155   160
Phe Ile Glu Glu Leu Phe Ser Leu Met Val Val Asn Arg Leu Thr Glu
                165   170   175
Glu Leu Gly Cys Asp Glu Ile Ile Asp Arg Glu
            180   185

<210> 4713
<211> 1324
<212> DNA
<213> Homo sapiens

<400> 4713

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cagaagaact atgaacactt atttaaggtg aatgataaat ccgtgggtgg ctccttctac
1140
ctgcagtcaa aggtggtccg cgcaaaggag cgcctggatg aggaactcaa aatccaggcc
1200
caggaggaca gagaaaaagg gcagatgccc catacgtgac tgctcggctc cccccgccca
1260
ccccgccgcc tctaatttat agcttggtaa taaatttctt ttctgcaaaa aaaaaaaaaa
1320
aaaa
1324


<210> 4714
<211> 145
<212> PRT
<213> Homo sapiens

<400> 4714
Met Arg Trp Gly Gln Ser Ala Ser Gly Ser Ser Val Lys Phe Thr Arg
```

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 1              5               10              15
Leu Pro Ala Cys Pro Ala Lys Tyr Leu Ala Gln Ile Ile Val Met Gly
             20                  25              30
Val Gln Val Val Gly Arg Ala Phe Ala Arg Ala Leu Arg Gln Glu Phe
             35              40              45
Ala Ala Ser Arg Ala Ala Ala Asp Ala Arg Gly Arg Ala Gly His Arg
     50              55              60
Ser Ala Ala Ala Ser Asn Leu Ser Gly Leu Ser Leu Gln Glu Ala Gln
 65              70              75              80
Gln Ile Leu Asn Val Ser Lys Leu Ser Pro Glu Glu Val Gln Lys Asn
                 85              90              95
Tyr Glu His Leu Phe Lys Val Asn Asp Lys Ser Val Gly Gly Ser Phe
             100             105             110
Tyr Leu Gln Ser Lys Val Val Arg Ala Lys Glu Arg Leu Asp Glu Glu
     115             120             125
Leu Lys Ile Gln Ala Gln Glu Asp Arg Glu Lys Gly Gln Met Pro His
     130             135             140
Thr
145
```

<210> 4715
<211> 2051
<212> DNA
<213> Homo sapiens

<400> 4715
nngggtttcg acagcctaga aggaacaaaa cggcatttcc gggaagatgc gcgacaagtc
60
aggtccggca catgttccgc gggcccagca atgacggatg atatcacctc ttcttctctg
120
gtgagagtct gaggatagag acttttttct caccatgaat gtcaccccag aggtcaagag
180
tcgtgggatg aagtttgctg aggagcagct gctaaagcat ggatggactc aaggcaaagg
240
cctcggcgga aggagaatgg tatcactcag gctctcaggg tgacactgaa gcaagacact
300
catggggtag acatgaccc tgccaaggag ttcacaaacc actggtggaa tgagctcttc
360
aacaagactg cggccaactt ggtagtggaa actgggcagg atggagtaca gataaggagc
420
ctttctaagg agaccacccg ttataatcat cccaagccca acttgctgta tcagaagttt
480
gtgaagatgg ctacattgac ttcaggtgga gagaagccaa acaaagactt ggagagctgc
540
agtgatgacg acaaccaggg gtccaagtcc ccaaagattc tgactgatga gatgctgctc
600
caagcctgtg aggggcgaac agcacacaag gctgcccgtc ttgggatcac aatgaaggcc
660
aagcttgctc gcctagaggc ccaggagcag gccttcctgg ctcgtctcaa aggccaggac
720
cctggggccc ctcaactgca gtcagagagc aagccccca aaaaaaagaa aaagaaaagg
780
aggcagaaag aggaggaaga agctacagca tctgaaagga atgatgcaga tgagaagcac
840
```

ccagaacatg ctgagcagaa catcagaaaa agcaagaaga agaaaaggcg acatcaagaa
900
ggaaaggtct cagatgaaag agagggtaca actaaagaat gagaaggagg acgctgcagg
960
aacaagtggg cttggggaat tgaatagcag agagcaaacc aatcagtccc tcaggaaagg
1020
gaagaaaaag aagaggtgng caccatgaag aggagaagat gggggtcttg gaggaaggag
1080
gaaaaggcaa ggaggctgca gagtgtcagg acagaggagg tagagagcag ggcatatgct
1140
gacccatgca gccgaagaaa gaagaggcag caacaggagg aggaggactt gaacctagaa
1200
gatagaggtg aggaaactgt tttaggtggt ggaaccaggg aagcagagag cagagcatgc
1260
agtgatggaa gaagcaggaa aagcaagaag aaaagacagc agcatcaaga ggaggaggac
1320
atcttggatg taagggatga gaaggatggc ggggctaggg aagcagagag cagagcacac
1380
actggctcaa gcagcnagag gtaagaggaa gaggcagcag catcccaaga aggaaagagc
1440
tggagtcagc actgtccaga aagccaaaaa gaaacagaag aagagagact aaaggtctgg
1500
taaaggtagg gctcaattga ttgattttca ggagttgaag cctcaaagac cagggttgat
1560
gcaggtctgc aggtcttctg cacccccctc aatgaggagt ccctcccaga aaggaaactg
1620
atctctggga cgtcagctgc tgagaggagc aagcggtagt accacccctt agttgaggga
1680
gtcagcacag tcctttctgc agcttctaac ccaggaccat gaactcaggt gcctagagaa
1740
gccaggcagc taaaggacaa ggaatgctgg gggctgtggg aacaggaatg cagataccct
1800
ttgaaggagc attcctgcta aaagaagctg aaaatgtaga cctatgtgaa gtgctctgat
1860
ttctaaatat tgtgaaggtt aagaaaaaca taaatttagg tctatgggct agatttagcc
1920
cacagttgcc agtttctagc gctaccaaat gaatgaataa acatgcttgc gctcctagcc
1980
tagagataaa tcctgactgg catctctgtt cccagcctgg gaaggtcctg aatacaaatt
2040
agaagatatt c
2051

<210> 4716
<211> 239
<212> PRT
<213> Homo sapiens

<400> 4716
Met Asp Ser Arg Gln Arg Pro Arg Arg Lys Glu Asn Gly Ile Thr Gln
1   5   10   15
Ala Leu Arg Val Thr Leu Lys Gln Asp Thr His Gly Val Gly His Asp
            20   25   30
Pro Ala Lys Glu Phe Thr Asn His Trp Trp Asn Glu Leu Phe Asn Lys

```
                 35                    40                    45
Thr Ala Ala Asn Leu Val Val Glu Thr Gly Gln Asp Gly Val Gln Ile
     50                    55                    60
Arg Ser Leu Ser Lys Glu Thr Thr Arg Tyr Asn His Pro Lys Pro Asn
65                    70                    75                    80
Leu Leu Tyr Gln Lys Phe Val Lys Met Ala Thr Leu Thr Ser Gly Gly
                 85                    90                    95
Glu Lys Pro Asn Lys Asp Leu Glu Ser Cys Ser Asp Asp Asp Asn Gln
                100                   105                   110
Gly Ser Lys Ser Pro Lys Ile Leu Thr Asp Glu Met Leu Leu Gln Ala
                115                   120                   125
Cys Glu Gly Arg Thr Ala His Lys Ala Ala Arg Leu Gly Ile Thr Met
     130                   135                   140
Lys Ala Lys Leu Ala Arg Leu Glu Ala Gln Glu Gln Ala Phe Leu Ala
145                   150                   155                   160
Arg Leu Lys Gly Gln Asp Pro Gly Ala Pro Gln Leu Gln Ser Glu Ser
                165                   170                   175
Lys Pro Pro Lys Lys Lys Lys Lys Arg Arg Gln Lys Glu Glu Glu
                180                   185                   190
Glu Ala Thr Ala Ser Glu Arg Asn Asp Ala Asp Glu Lys His Pro Glu
                195                   200                   205
His Ala Glu Gln Asn Ile Arg Lys Ser Lys Lys Lys Arg Arg His
     210                   215                   220
Gln Glu Gly Lys Val Ser Asp Glu Arg Glu Gly Thr Thr Lys Glu
225                   230                   235
```

```
<210> 4717
<211> 2753
<212> DNA
<213> Homo sapiens

<400> 4717
nggtacccgg tgtgatgggc cgcccactgg tctgcagagc ttcccaggct gcctgcaggc
60
cctgcacgtc cccggagttg gggctgtagc cctgcccata cactgcaatc cagcccacag
120
gctctgagtt gggtgaaccg gggtccccat agcgggtaac ttgggatggt gggtacttgg
180
ccagccaggc atccagctta gtggcaggcg ttgtgcgggc atcaaacact agccaggggt
240
ccatgtcagc tgccatggcc tctgcagcca ggtgctcggc ggtgaagcca tcctcacggc
300
cacctggaga gccctcctct tccagctcct cacctggttc catcctgctc cggccttcgc
360
tgcgttcgac gccggcccag ccccgggccc ggctccgctc ctgccgtggc tccgcgcagc
420
atcctgggcc tcccccgct ttctgaggac agcatcaaag tgattcgcaa catgagagca
480
gcctctccac cagcatctgc ttcagacttg attgagcagc agcagaaacg gggccgccga
540
gagcacaagg ctctgataaa gcaggacaac ctagatgcct tcaacgagcg ggatccctac
600
aaggctgatg actctcgaga agaggaagag gagaatgatg atgacaacag tctggagggg
660
```

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gagacgtttc ccctggaacg ggatgaagtg atgcctcccc cgctacagca cccacagact
720
gacaggctga cttgccccaa agggctcccg tgggctccca aggtcagaga gaaagacatt
780
gagatgttcc ttgagtccag ccgcagcaaa tttataggtt acactctagg cagtgacacg
840
aacacagtgg tggggctgcc caggccaatc cacgaaagca tcaagactct gaaacagcac
900
aagtacacgt cgattgcaga ggtccaggca cagatgaagg aggaatacct ccgctcccct
960
ctctcagggg gagaagaaga agttgagcaa gtccctgcag aaaccctcta ccaaggcttg
1020
ctccccagcc tgcctcagta tatgattgcc ctcctgaaga tcctgttggc tgcagcaccc
1080
acctcaaaag ccaaaacaga ctcaatcaac atcctagcgg acgtcttgcc tgaggagatg
1140
cccaccacag tgttgcagag catgaagctg ggggtggatg taaaccgcca caaagaggtc
1200
attgttaaag ccatttctgc tgccctgctg ctgctgctta agcacttttta agtgaaccat
..1260
ttctaccagt ttgaatacat ggcccagcac ctggtgtttg ccaactgcat tcctttgatc
1320
ctaaagttct tcaatcaaaa catcatgtcc tacatcactg ccaagaacag catttctgtc
1380
ctggattacc ctcactgcgt ggtgcatgag ctgccagagc tgacggcgga gagtttggaa
1440
gcaggtgaca gtaaccaatt ttgctggagg aacctctttt cttgtatcaa tctgcttcgg
1500
atcttgaaca agctgacaaa gtggaagcat tcaaggacaa tgatgctggt ggtgttcaag
1560
tcagccccca tcttgaagcg ggccctaaag gtgaaacaag ccatgatgca gctctatgtg
1620
ctgaagctgc tcaaggtaca gaccaaatac ttggggcggc agtggcgaaa gagcaacatg
1680
aagaccatgt ctgccatcta ccagaaggtg cggcatcggc tgaacgacga ctgggcatac
1740
ggcaatgatc ttgatgcccg gccttgggac ttccaggcag aggagtgtgc ccttcgtgcc
1800
aacattgaac gcttcaacgc ccggcgctat gaccgggccc acagcaaccc tgacttcctg
1860
ccagtggaca actgcctgca gagtgtcctg gccaacgggt ggacctccc tgaggacttt
1920
cagatgaact atgacctctg gttagaaagg gaggtcttct ccaagcccat ttcctgggaa
1980
gagctgctgc agtgaggctg ttggttaggg gactgaaatg gagagaaaag atgatctgaa
2040
ggtacctgtg ggactgtcct agttcattgc tgcagtgctc catccccca ccaggtggca
2100
gcacagcccc actgtgtctt ccgcagtctg tcctgggctt gggtgagccc agcttgacct
2160
ccccttggtt cccagggtcc tgctccgaag cagtcatctc tgcctgagat ccattcttcc
2220
tttacttccc ccaccctcct ctcttggata tggttggttt tggctcattt cacaatcagc
2280
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ccaaggctgg gaaagctgga atgggatggg aacccctccg ccgtgcatct gaatttcagg
2340
ggtcatgctg atgcctctcg agacatacaa atccttgctt tgtcagcttg caaaggagga
2400
gagtttagga ttagggccag ggccagaaag tcggtatctt ggttgtgctc tggggtgggg
2460
gtggggtgtt tctgatgtta ttccagcctc ctgctacatt atatccagaa gtaattgcgg
2520
aggctccttc agctgcctca gcactttgat tttggacagg gacaaggtag gaagagaagc
2580
ttcccttaac cagagggggcc atttttcctt ttggctttcg agggcctgta aatatctata
2640
tataattctg tgtgtattct gtgtcatgtt ggggtttta atgtgattgt gtattctgtt
2700
tacattaaaa agaagcaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaa
2753

<210> 4718
<211> 259
<212> PRT
<213> Homo sapiens

<400> 4718
Met Arg Ala Ala Ser Pro Pro Ala Ser Ala Ser Asp Leu Ile Glu Gln
1   5   10   15
Gln Gln Lys Arg Gly Arg Arg Glu His Lys Ala Leu Ile Lys Gln Asp
            20   25   30
Asn Leu Asp Ala Phe Asn Glu Arg Asp Pro Tyr Lys Ala Asp Asp Ser
        35   40   45
Arg Glu Glu Glu Glu Glu Asn Asp Asp Asp Asn Ser Leu Glu Gly Glu
    50   55   60
Thr Phe Pro Leu Glu Arg Asp Glu Val Met Pro Pro Pro Leu Gln His
65   70   75   80
Pro Gln Thr Asp Arg Leu Thr Cys Pro Lys Gly Leu Pro Trp Ala Pro
                85   90   95
Lys Val Arg Glu Lys Asp Ile Glu Met Phe Leu Glu Ser Ser Arg Ser
            100   105   110
Lys Phe Ile Gly Tyr Thr Leu Gly Ser Asp Thr Asn Thr Val Val Gly
        115   120   125
Leu Pro Arg Pro Ile His Glu Ser Ile Lys Thr Leu Lys Gln His Lys
    130   135   140
Tyr Thr Ser Ile Ala Glu Val Gln Ala Gln Met Lys Glu Glu Tyr Leu
145   150   155   160
Arg Ser Pro Leu Ser Gly Gly Glu Glu Glu Val Glu Gln Val Pro Ala
                165   170   175
Glu Thr Leu Tyr Gln Gly Leu Leu Pro Ser Leu Pro Gln Tyr Met Ile
                180   185   190
Ala Leu Leu Lys Ile Leu Leu Ala Ala Pro Thr Ser Lys Ala Lys
            195   200   205
Thr Asp Ser Ile Asn Ile Leu Ala Asp Val Leu Pro Glu Glu Met Pro
    210   215   220
Thr Thr Val Leu Gln Ser Met Lys Leu Gly Val Asp Val Asn Arg His
225   230   235   240
Lys Glu Val Ile Val Lys Ala Ile Ser Ala Ala Leu Leu Leu Leu Leu

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                    245              250              255
Lys His Phe


<210> 4719
<211> 589
<212> DNA
<213> Homo sapiens


<400> 4719
cgaaccatgg ccggcatggt ggacttccag gatgaggagc aggtcaagtc cttttttggag
60
aacatggagg tggagtgcaa ctaccactgc taccacgaga aggacccgga cggttgctat
120
cggctggtgg actatttgga agggatccgg aagaattttg atgaggctgc caaggtgttg
180
aagtttaact gtgaagagaa ccagcacagt gatagctgct acaaactggg ggcctactat
240
gtgactggaa aaggtggtct gacccaggac ctgaaagctg ccgccaggtg cttttttgatg
300
gcgtgtgaga gcctggaaa gaagtcaata gcagcatgtc acaacgttgg cctcctggca
360
catgatggac aggttaatga ggatggccag cctgacttgg gaaaggccag ggactactac
420
acaagggcct gtgatggtgg ctatacttcc agttgcttca acctcagtgc catgttcctg
480
cagggtgccc caggctttcc caaggacatg gacctggcat gtaaatactc catgaaagcc
540
tgtgacctgg gtcatatctg ggcctgtgcc aatgccagtc gcatgtaca
589


<210> 4720
<211> 196
<212> PRT
<213> Homo sapiens


<400> 4720
Arg Thr Met Ala Gly Met Val Asp Phe Gln Asp Glu Glu Gln Val Lys
1               5                  10                  15
Ser Phe Leu Glu Asn Met Glu Val Glu Cys Asn Tyr His Cys Tyr His
            20                  25                  30
Glu Lys Asp Pro Asp Gly Cys Tyr Arg Leu Val Asp Tyr Leu Glu Gly
         35                  40                  45
Ile Arg Lys Asn Phe Asp Glu Ala Ala Lys Val Leu Lys Phe Asn Cys
      50                  55                  60
Glu Glu Asn Gln His Ser Asp Ser Cys Tyr Lys Leu Gly Ala Tyr Tyr
65                  70                  75                  80
Val Thr Gly Lys Gly Gly Leu Thr Gln Asp Leu Lys Ala Ala Ala Arg
                  85                  90                  95
Cys Phe Leu Met Ala Cys Glu Lys Pro Gly Lys Lys Ser Ile Ala Ala
               100                 105                 110
Cys His Asn Val Gly Leu Leu Ala His Asp Gly Gln Val Asn Glu Asp
            115                 120                 125
Gly Gln Pro Asp Leu Gly Lys Ala Arg Asp Tyr Tyr Thr Arg Ala Cys
```

```
        130                    135                    140
Asp Gly Gly Tyr Thr Ser Ser Cys Phe Asn Leu Ser Ala Met Phe Leu
145                    150                    155                    160
Gln Gly Ala Pro Gly Phe Pro Lys Asp Met Asp Leu Ala Cys Lys Tyr
                   165                    170                    175
Ser Met Lys Ala Cys Asp Leu Gly His Ile Trp Ala Cys Ala Asn Ala
                   180                    185                    190
Ser Arg Met Tyr
            195
```

```
<210> 4721
<211> 1385
<212> DNA
<213> Homo sapiens
```

```
<400> 4721
nncaacagct ccgacaaggt actacgatga tatatatttt gattctgatt ccgaggatga
60
agacagagtt tagggactgg acttgcagtg taaacagaga cgctgcaaat tgcttgtgga
120
cggtgtaggc cgctgcaggc caccatgaac cggcttccgg atgactacga ccctacgcg
180
gttgaagagc ctagcgacga ggagccggct ttgagcagct ctgaggatga agtggatgtg
240
cttttacatg gaactcctga ccaaaaacga aaactcatca gagaatgtct taccggagaa
300
agtgaatcat ctagtgaaga tgaatttgaa aaggagatgg aagctgaatt aaattctacc
360
atgaaaacaa tggaggacaa gttatcctct ctgggaactg gatcttcctc aggaaatgga
420
aaagttgcaa cagctccgac aaggtactac gatgatatat attttgattc tgattccgag
480
gatgaagaca gagcagtaca ggtgaccaag aaaaaaaaga agaaacaaca caagattcca
540
acaaatgacg aattactgta tgatcctgaa aaagataaca gagatcaggc ctgggttgat
600
gcacagagaa ggggttacca tggtttggga ccacagagat cacgtcaaca acagcctgtt
660
ccaaatagtg atgctgtctt gaattgtcct gcctgcatga ccacactttg ccttgattgc
720
caaaggcatg aatcatacaa aactcaatat agagcaatgt ttgtaatgaa ttgttctatt
780
aacaaagagg aggttctaag atataaagcc tcagagaaca ggaagaaaag gcgggtccat
840
aagaagatga ggtctaaccg ggaagatgct gctgagaagg cagagacaga tgtggaagaa
900
atctatcacc cagtcatgtg cactgaatgt tccactgaag tggcagtcta cgacaaggat
960
gaagtctttc attttttcaa tgttttagca agccattcct aaacagccca actggcattt
1020
aattacccaa tactgtatat aaggcaaata tggacagtta ctttcctctt gcctgttcat
1080
atccttcagt gacattgagg aagcagtgtt tctctttta aaggagaata gttgtcaacc
1140
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ttcattcatc tcttacatct ctcaccctct cctttttttt ttctttgatt ttccccctta
1200
ttgatgggac tgatattcat tctgtttttg atgaacattt ggaaactgtc gggctttta
1260
ttaaagctct gtagaattaa aatgttctgg aattataagc aatctttgtt tctgagtgtt
1320
attttattt tggatatagc tttgatgtaa ttaaactgga aactctttcc tcaaaaaaaa
1380
agctt
1385
```

<210> 4722
<211> 285
<212> PRT
<213> Homo sapiens

<400> 4722

```
Met Asn Arg Leu Pro Asp Asp Tyr Asp Pro Tyr Ala Val Glu Glu Pro
 1               5                  10                  15
Ser Asp Glu Glu Pro Ala Leu Ser Ser Ser Glu Asp Glu Val Asp Val
                20                  25                  30
Leu Leu His Gly Thr Pro Asp Gln Lys Arg Lys Leu Ile Arg Glu Cys
            35                  40                  45
Leu Thr Gly Glu Ser Glu Ser Ser Ser Glu Asp Glu Phe Glu Lys Glu
        50                  55                  60
Met Glu Ala Glu Leu Asn Ser Thr Met Lys Thr Met Glu Asp Lys Leu
65                  70                  75                  80
Ser Ser Leu Gly Thr Gly Ser Ser Ser Gly Asn Gly Lys Val Ala Thr
                85                  90                  95
Ala Pro Thr Arg Tyr Tyr Asp Asp Ile Tyr Phe Asp Ser Asp Ser Glu
            100                 105                 110
Asp Glu Asp Arg Ala Val Gln Val Thr Lys Lys Lys Lys Lys Lys Gln
        115                 120                 125
His Lys Ile Pro Thr Asn Asp Glu Leu Leu Tyr Asp Pro Glu Lys Asp
    130                 135                 140
Asn Arg Asp Gln Ala Trp Val Asp Ala Gln Arg Arg Gly Tyr His Gly
145                 150                 155                 160
Leu Gly Pro Gln Arg Ser Arg Gln Gln Gln Pro Val Pro Asn Ser Asp
                165                 170                 175
Ala Val Leu Asn Cys Pro Ala Cys Met Thr Thr Leu Cys Leu Asp Cys
            180                 185                 190
Gln Arg His Glu Ser Tyr Lys Thr Gln Tyr Arg Ala Met Phe Val Met
        195                 200                 205
Asn Cys Ser Ile Asn Lys Glu Glu Val Leu Arg Tyr Lys Ala Ser Glu
    210                 215                 220
Asn Arg Lys Lys Arg Arg Val His Lys Lys Met Arg Ser Asn Arg Glu
225                 230                 235                 240
Asp Ala Ala Glu Lys Ala Glu Thr Asp Val Glu Glu Ile Tyr His Pro
                245                 250                 255
Val Met Cys Thr Glu Cys Ser Thr Glu Val Ala Val Tyr Asp Lys Asp
            260                 265                 270
Glu Val Phe His Phe Phe Asn Val Leu Ala Ser His Ser
        275                 280                 285
```

<210> 4723
<211> 1213
<212> DNA
<213> Homo sapiens

<400> 4723
tttttttttt tttttttttt tttttttttt ttttccggta tccactggaa gttttatttc
60
tttagggttc tatcccaacc agtcgcttaa aaaccaagta acacagacct gaggggtggg
120
ggctggggac tgcacctccc tcctactcat ggtggacagc agtggggact agggaggggc
180
aggagaggtg gctgacgcca ggcagcagca gcagtgatgg ggccacgacg ccacagagca
240
agctccatcc tcccccagac cctggtggga gtccctgtgg gttggggtgg ggagtgggga
300
gaacccaccc caggccctcc ctctcccttc cccagacagt ctcctttcgg gctcaaccca
360
tttcttccgg caggagactg aggcacacag agaggaggaa gtgggagagg aggacgaggg
420
aggggcaggn gtggcagcac aaatgaaggc agaggtgaga ggcgtgggca aggccactcc
480
accccacac ccaccccaga gaggggcgag gaagccacac catcacgcag catgtcgggg
540
ggacaaggcg gggtttaagg ctgaggggc ccggggcagg cgggcctcgg gcctcagtca
600
aagccgtgcc cagtcgctgt gctctgagtc gtattccagc tcggcgccca cacacttgac
660
accatccagc agcatgggcg tgccgtggtg ccggtccatg acgcgggcct gcaccgtcac
720
gcgcacacag gtgccagtgc caccttcgca ggctagcagt atctcctctt tgaggacgcc
780
ctctttgtgc gccgagtact cacacttgac actataacct tcagggacgg gcaccacgct
840
gaggagcttg aggtgcaggc tggggacagg tgcctcgcgg acatccttgc tcagcctgtg
900
cactgggggc agagtgaagg taatctcata cctgtgcagg atcttcagga agccaacctt
960
gaccagaaag ctgctgtcac tctcctgggt gaccatgacc accgagtcat gcagcttctc
1020
atcaaagtgg acgtggctgt gggatccttc tgcatcgtgg cctgccgcaa agcggatact
1080
ccggactctg ggcttgttgc ccttgttggc tgcagccatg gacgccctcc ctgccacgca
1140
gctcctgcca gacaccgcca ctcacgctca gcagcctccc atgctccagg acaccagcg
1200
ggagccttgc tgt
1213

<210> 4724
<211> 54
<212> PRT
<213> Homo sapiens

<400> 4724
Met Gly Pro Arg Arg His Arg Ala Ser Ser Ile Leu Pro Gln Thr Leu
1   5   10   15
Val Gly Val Pro Val Gly Trp Gly Gly Glu Trp Gly Glu Pro Thr Pro
            20   25   30
Gly Pro Pro Ser Pro Phe Pro Arg Gln Ser Pro Phe Gly Leu Asn Pro
        35   40   45
Phe Leu Pro Ala Gly Asp
    50

<210> 4725
<211> 366
<212> DNA
<213> Homo sapiens

<400> 4725
nnctttcttg aaggtgaatt aggtagaagc cgtaggaccc ctgcagggggg gagaggggcc
60
atgcttgcaa tagacacggc ttcagacatc ctggcacatg tccacgtgta ctctcgcctg
120
tgcgcatgtg cacgtgtgta tatgcatatg tgcacaggtg cctgtgcctg tgtgaacaca
180
tgttctcacg tgtgtacctg cntctcttgc ccatgcntgt acgtgcacac gtgcctctgt
240
atgcatgcat gtatagctgt gtgcccatac cctcacgtga gaatacatat gcgcttgtgc
300
cttcacctct gcatgcatgc tagtgtgctc ctgcgtgcat gggtgtgcat ctgtgcctgc
360
acgcgt
366

<210> 4726
<211> 122
<212> PRT
<213> Homo sapiens

<400> 4726
Xaa Phe Leu Glu Gly Glu Leu Gly Arg Ser Arg Arg Thr Pro Ala Gly
1   5   10   15
Gly Arg Gly Ala Met Leu Ala Ile Asp Thr Ala Ser Asp Ile Leu Ala
            20   25   30
His Val His Val Tyr Ser Arg Leu Cys Ala Cys Ala Arg Val Tyr Met
        35   40   45
His Met Cys Thr Gly Ala Cys Ala Cys Val Asn Thr Cys Ser His Val
    50   55   60
Cys Thr Cys Xaa Ser Cys Pro Cys Xaa Tyr Val His Thr Cys Leu Cys
65   70   75   80
Met His Ala Cys Ile Ala Val Cys Pro Tyr Pro His Val Arg Ile His
            85   90   95
Met Arg Leu Cys Leu His Leu Cys Met His Ala Ser Val Leu Leu Arg
            100   105   110
Ala Trp Val Cys Ile Cys Ala Cys Thr Arg
        115   120

<210> 4727
<211> 2031
<212> DNA
<213> Homo sapiens

<400> 4727
tttttttttt gagacggagt ccacacccgt cacctgggct ggagtgcaat ggtgtgatct
60
cagctcactg caacctctgt ctcctgggtt cacatgattc tcctgcctca gcctcccaag
120
tagctgggat tacagggacc caccaccaca cccggctaat ttttttttgta tttttactag
180
agacggggtt tcactatgtt ggccagactg gtctcgaact cctaacctca tgatccgctc
240
actttggcct cccaaagtgc tgggattaca gccgtgagcc accgcacctg tctgcgttc
300
acttacttct tcacttcctc gatggcctcc ggcaaccggc ggcaggtggt aagtagcagg
360
gagactgcga gttcggcggt ggtatctgtc aggacatctg gggtgtagcc aactcggatc
420
ccacgcttct tgatttcatc caaagccaag tggtcgatgc ccacagacat ggtgctgatg
480
actttgagat tggccccggc ccagctacat tcccgggcca gcttctgtac tgccaggtcc
540
gggtcggcgg ctgcactgcg gatgagaccg gtgcgactca tgaaggtgtt cgtcacccgc
600
aggatacccg ccgagggtag ggtcgcgctc gcccgggcgg cagactgtga ggtggagcag
660
tgggactcgg atgagcccat ccctgccaag gagctagagc gaggtgtggc gggggcccac
720
ggcctgctct gcctcctctc cgaccacgtg gacaagagga tcctggatgc tgcaggggcc
780
aatctcaaag tcatcagcac catgtctgtg ggcatcgacc acttggcttt ggatgaaatc
840
aagaagcgtg ggatccgagt tggctacacc ccagatgtcc tgacagatac caccgccgaa
900
ctcgcagtct ccctgctact taccacctgc cgccggttgc cggaggccat cgaggaagtg
960
aagaatggtg gctggacctc gtggaagccc ctctggctgt gtggctatgg actcacgcag
1020
agcactgtcg gcatcatcgg gctggggcgc ataggccagg ccattgctcg gcgtctgaaa
1080
ccattcggtg tccagagatt tctgtacaca gggcgccagc ccaggcctga ggaagcagcg
1140
gaattccagg cagagtttgt gtctacccct gagctggctg cccaatctga tttcatcgtc
1200
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1260
atgaaggaaa cagctgtgtt catcaacatc agcaggggcg acgtcgtaaa ccaggacgac
1320
ctgtaccagg ccttggccag tggtaagatt gcagctgctg gactggatgt gacgagccca
1380
gaaccactgc ctacaaacca ccctctcctg accctgaaga actgtgtgat tctgccccac
1440

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attggcagtg ccacccacag aacccgcaac accatgtcct tgttggcagc taacaacttg
1500
ctggctggcc tgagagggga gccgatgcct agtgaactca agctgtagcc aaacagtaga
1560
gatggagggc cgggaagcaa accgtgccct ggtattgtca gacacaccca ggcttgattt
1620
ggatccacag gcagagccaa gggaaggtgt gattctctga ggaaagagtg attctgatat
1680
atgtacttgg cgcaaatgtg tccaacacca atgtgacaga ctgaccccaa caccctccag
1740
tcacaacaac tcacgtggac tgtcctccct cagggcttcc aggatagcct tcttttcttc
1800
gggcaagccc tagcccaaga ccttgcctcc ttggatcttt ccccagccg ccttcttcaa
1860
tatctagatg acctccttct ctgtagcccc tccctaaaaa actcccaaac tcacactgcc
1920
acccttctga atttccttac taataaaggc tatagggtct cccctttaaa gaacagcttt
1980
ccacccctac cgggacctac ttaggagttc aaccttcccc cgggtctcga g
2031


<210> 4728
<211> 328
<212> PRT
<213> Homo sapiens

<400> 4728
Met Arg Pro Val Arg Leu Met Lys Val Phe Val Thr Arg Arg Ile Pro
1               5                   10                  15
Ala Glu Gly Arg Val Ala Leu Ala Arg Ala Ala Asp Cys Glu Val Glu
                20                  25                  30
Gln Trp Asp Ser Asp Glu Pro Ile Pro Ala Lys Glu Leu Glu Arg Gly
            35                  40                  45
Val Ala Gly Ala His Gly Leu Leu Cys Leu Leu Ser Asp His Val Asp
        50                  55                  60
Lys Arg Ile Leu Asp Ala Ala Gly Ala Asn Leu Lys Val Ile Ser Thr
65                  70                  75                  80
Met Ser Val Gly Ile Asp His Leu Ala Leu Asp Glu Ile Lys Lys Arg
                85                  90                  95
Gly Ile Arg Val Gly Tyr Thr Pro Asp Val Leu Thr Asp Thr Thr Ala
                100                 105                 110
Glu Leu Ala Val Ser Leu Leu Leu Thr Thr Cys Arg Arg Leu Pro Glu
            115                 120                 125
Ala Ile Glu Glu Val Lys Asn Gly Gly Trp Thr Ser Trp Lys Pro Leu
        130                 135                 140
Trp Leu Cys Gly Tyr Gly Leu Thr Gln Ser Thr Val Gly Ile Ile Gly
145                 150                 155                 160
Leu Gly Arg Ile Gly Gln Ala Ile Ala Arg Arg Leu Lys Pro Phe Gly
                165                 170                 175
Val Gln Arg Phe Leu Tyr Thr Gly Arg Gln Pro Arg Pro Glu Glu Ala
                180                 185                 190
Ala Glu Phe Gln Ala Glu Phe Val Ser Thr Pro Glu Leu Ala Ala Gln
            195                 200                 205
Ser Asp Phe Ile Val Val Ala Cys Ser Leu Thr Pro Ala Thr Glu Gly
```

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           210                  215                  220
Leu Cys Asn Lys Asp Phe Phe Gln Lys Met Lys Glu Thr Ala Val Phe
225                  230                  235                  240
Ile Asn Ile Ser Arg Gly Asp Val Val Asn Gln Asp Asp Leu Tyr Gln
               245                  250                  255
Ala Leu Ala Ser Gly Lys Ile Ala Ala Ala Gly Leu Asp Val Thr Ser
               260                  265                  270
Pro Glu Pro Leu Pro Thr Asn His Pro Leu Leu Thr Leu Lys Asn Cys
           275                  280                  285
Val Ile Leu Pro His Ile Gly Ser Ala Thr His Arg Thr Arg Asn Thr
           290                  295                  300
Met Ser Leu Leu Ala Ala Asn Asn Leu Leu Ala Gly Leu Arg Gly Glu
305                  310                  315                  320
Pro Met Pro Ser Glu Leu Lys Leu
               325
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```
<210> 4729
<211> 753
<212> DNA
<213> Homo sapiens

<400> 4729
ngctagcagc agcccgacca cgcgttaccg cacgctcgcg ccttttccctt gacacggcgg
60
acgccggagg attggggcgg caatttgtct tttccttttt tattaaaatt attttttcctg
120
cctgttgttg gatttgggga aattttttgt ttgtttttta tgatttgtat ttgactgaga
180
gaaacccact gaagacgtct gcgtgagaat agagaccacc gaggccgact cgcgggccgc
240
tgcacccacc gccaaggaca aaaggagccc agcgctacta gctgcacccg attcctccca
300
gtgcttagca tgaagaaggc cgaaatggga cgattcagta tttccccgga tgaagacagc
360
agcagctaca gttccaacag cgacttcaac tactcctacc ccaccaagca agctgctctg
420
aaaagccatt atgcagatgt agatcctgaa aaccagaact ttttacttga atcgaatttg
480
gggaagaaga agtatgaaac agaatttcat ccaggtacta cttcctttgg aatgtcagta
540
tttaatctga gcaatgcgat tgtgggcagt ggaatccttg ggctttctta tgccatggct
600
aatactggaa ttgctctttt tataattctc ttgacatttg tgtcaatatt ttccctgtat
660
tctgttcatc tccttttgaa gactgccaat gaaggagggt ctttattata tgaacaattg
720
ggatataagg catctggatt agttggaaag ctt
753
```

```
<210> 4730
<211> 148
<212> PRT
<213> Homo sapiens
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```
<400> 4730
Met Lys Lys Ala Glu Met Gly Arg Phe Ser Ile Ser Pro Asp Glu Asp
1               5                   10                  15
Ser Ser Ser Tyr Ser Ser Asn Ser Asp Phe Asn Tyr Ser Tyr Pro Thr
            20                  25                  30
Lys Gln Ala Ala Leu Lys Ser His Tyr Ala Asp Val Asp Pro Glu Asn
        35                  40                  45
Gln Asn Phe Leu Leu Glu Ser Asn Leu Gly Lys Lys Lys Tyr Glu Thr
    50                  55                  60
Glu Phe His Pro Gly Thr Thr Ser Phe Gly Met Ser Val Phe Asn Leu
65              70                  75                  80
Ser Asn Ala Ile Val Gly Ser Gly Ile Leu Gly Leu Ser Tyr Ala Met
            85                  90                  95
Ala Asn Thr Gly Ile Ala Leu Phe Ile Ile Leu Leu Thr Phe Val Ser
        100                 105                 110
Ile Phe Ser Leu Tyr Ser Val His Leu Leu Leu Lys Thr Ala Asn Glu
    115                 120                 125
Gly Gly Ser Leu Leu Tyr Glu Gln Leu Gly Tyr Lys Ala Ser Gly Leu
    130                 135                 140
Val Gly Lys Leu
145
```

```
<210> 4731
<211> 2417
<212> DNA
<213> Homo sapiens
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<400> 4731
tttttttttt tttttcagac aaggtaccat tttattcctt ataaatatat ttcatattg
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ttgctgtaaa aacattacat ttcacatttt taaaaaattt tttaacagta aaaataatac
120
ttggaagaca gctgaggaaa aaggcgccaa taagacaaac tcacagatgg gatttatctc
180
cctcttgctt ttttttttt tttttgcccc tggtaaaagt cagaacctgg gatgaccaga
240
aagtaacagg acagatttct cccagcaaat cagtctccac aaccaaatga atattgttct
300
ccaaggagtc aagctataga ctcacaatga caacgtggcc atggctcaaa acactctctg
360
aaattacaaa attgctttct gagccaattt aaaagtcaca tgattgaatc caagctattt
420
tactttaaat ggtccttttg ctttgcacct gagacctcgc ttggccacag acgtcattcg
480
ctggactccc tgggcactaa atgagtgtct agcatcctta aggctgctca acacacagcc
540
ccagactctg aatatgattc caagaaatat tctgaaaaaa gtcacatcgc tggaataaac
600
agtttcccaa gataactgct ttgaaaacca gtcccgttag tttctaaaag cccacctacg
660
gcaccttcct tccatcagag tctgctgccc gggtgggctg ggaaggaggg agatacaaag
720
aagaaagtag gcatgatcac tgggtcggtt cccaagccac cctcaccctc caagaaggca
780
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tgaatggaac aaccccgaga acagagcacg tgtgaagaac caacacgaca ggcacgggat
840
ggcagcactg gtggaaggga ggcaaggagg ccgccagtgc caaggaggag aggggcaca
900
agcgcaggca gggaaggtgg caccaaaacc tagtaagaac aaagcaaaac caccgtggtt
960
tccacactgc tctctccctt tattcctctc tttcctgccc tgtataccaa cggcataaga
1020
agcctgcaca aagagaaaaa tccgtatatc cagttatatc tacacggtcc aaactggggg
1080
cgggggggaat tcaaacagct ttctaaagac gagacggcag tgaaaactct gagggagagg
1140
ggaaggggag gccctcctga gcgaagttcc catgtgtcaa gaacgtgccc tcccctcccc
1200
atgaggacct gaagctgggg gttgtcttgg gaagtgaggg gggttgggaa acaccatcag
1260
cagctgccag ctcttaattc tcaaggagat cgaagggaca ggaaggagag ccctgcgcca
1320
cctcaggcta gcctggcttt gagctttacc aagagacaga attccacata catttttttt
1380
tttttactaa gttataaaaa aaaaaacccc atcaccaaag acacctgtgc acaagtgtct
1440
gtcccttctg tcaccaacct agggcactac acccttccca acatcatgac cctactgcca
1500
ggtctacaga ttttgtaaca ctcaaagtgt cctgcattaa aaagcacgtg tctatttcct
1560
acgtgaaggg gccaagggag ccctggtggc ccaaatatct tcacccagga ctgggagggc
1620
ggcctcgatg acaaccaagg ggtggatgct gacactccat cccaggacag gtggctgggt
1680
aggattccct gagcccctga cagctgggac atagggccag gacttgtacc cgaggcagct
1740
gggcagtggg cagtcacatt ccagtaggcc ctgaggaatc cccaaataag tcacgctggg
1800
aggaaagtga gacaccaaaa cagaaacatg ccctgccatc cgggcgtggc tcactctgtc
1860
ttcgcgcagg gctggttggc atggtgctac actcccgaga cctccctcct tctccccaag
1920
aacagctctg cttatcgaca tgcacgcagc ccaggctccc ctagatccct ggaggctcca
1980
gaaacaccaa gggccaaaac gccagcagcc actaacccaa acccacgtct tcctcctgtc
2040
atttcctcat cctgacgctc acgggtgcaa ggactctcct tggccttcct catcctgctt
2100
tcaggcagca aacagaaatg gggaaatccc tggtggggcc aggagacaga aaggaacctc
2160
cagaacctcc ctgggtctct cccggccacc caaataaaag aaaactttaa tcagtaaagg
2220
cttctgaata catcgtaaaa gaaaacaaag catttctgag gcgtcctttc aataaccgga
2280
ggaaggcggc gtcaggaggg tgcttcctcg ggtcagagca gagagtttcc agacgctcaa
2340
accctccagg agttcctcga ggaaagagga gagaatgatc aaggtagtgt ttaactgcca
2400
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cattccaaaa agtgaat
2417

<210> 4732
<211> 129
<212> PRT
<213> Homo sapiens

<400> 4732
Met Ser Ile Ser Arg Ala Val Leu Gly Glu Lys Glu Gly Gly Leu Gly
 1   5   10   15
Ser Val Ala Pro Cys Gln Pro Ala Leu Arg Glu Asp Arg Val Ser His
            20   25   30
Ala Arg Met Ala Gly His Val Ser Val Leu Val Ser His Phe Pro Pro
        35   40   45
Ser Val Thr Tyr Leu Gly Ile Pro Gln Gly Leu Leu Glu Cys Asp Cys
    50   55   60
Pro Leu Pro Ser Cys Leu Gly Tyr Lys Ser Trp Pro Tyr Val Pro Ala
65   70   75   80
Val Arg Gly Ser Gly Asn Pro Thr Gln Pro Pro Val Leu Gly Trp Ser
                85   90   95
Val Ser Ile His Pro Leu Val Val Ile Glu Ala Ala Leu Pro Val Leu
            100   105   110
Gly Glu Asp Ile Trp Ala Thr Arg Ala Pro Leu Ala Pro Ser Arg Arg
        115   120   125
Lys

<210> 4733
<211> 543
<212> DNA
<213> Homo sapiens

<400> 4733
nntccggagc tgctggtact cccgattgga gacgtagaac cgttacttgt cgagggcctt
60
agcggccgcc gtgaccctct cggggatccc acgatgttct tctacctgag caagaaaatt
120
tccattccca ataacgtgaa gctgcagtgt gtatcctgga caaggaaca agggttcata
180
gcatgcggtg gtgaagatgg attactgaaa gttttgaaat tagagacgca gacagatgat
240
gcaaaattga ggggccttgc agcccccagt aacctttcta tgaatcagac tcttgaaggt
300
catagtggtt ctgttcaagt tgtaacatgg aatgagcagt atcagaagtt gactaccagt
360
gatgaaaacg ggcttatcat tgtgtggatg ttatataaag gctcttggat tgaggagatg
420
atcaacaatc gaaataaatc agttgttcgc agtatgagct ggaatgctga cggacagaag
480
atctgcattg tatatgaaga tggggctgtg atagttggtt cagtggatgg caatcgtatt
540
tgg
543

```
<210> 4734
<211> 181
<212> PRT
<213> Homo sapiens

<400> 4734
Xaa Pro Glu Leu Leu Val Leu Pro Ile Gly Asp Val Glu Pro Leu Leu
 1               5                  10                  15
Val Glu Gly Leu Ser Gly Arg Arg Asp Pro Leu Gly Asp Pro Thr Met
                20                  25                  30
Phe Phe Tyr Leu Ser Lys Lys Ile Ser Ile Pro Asn Asn Val Lys Leu
            35                  40                  45
Gln Cys Val Ser Trp Asn Lys Glu Gln Gly Phe Ile Ala Cys Gly Gly
        50                  55                  60
Glu Asp Gly Leu Leu Lys Val Leu Lys Leu Glu Thr Gln Thr Asp Asp
65                  70                  75                  80
Ala Lys Leu Arg Gly Leu Ala Ala Pro Ser Asn Leu Ser Met Asn Gln
                85                  90                  95
Thr Leu Glu Gly His Ser Gly Ser Val Gln Val Val Thr Trp Asn Glu
            100                 105                 110
Gln Tyr Gln Lys Leu Thr Thr Ser Asp Glu Asn Gly Leu Ile Ile Val
            115                 120                 125
Trp Met Leu Tyr Lys Gly Ser Trp Ile Glu Glu Met Ile Asn Asn Arg
        130                 135                 140
Asn Lys Ser Val Val Arg Ser Met Ser Trp Asn Ala Asp Gly Gln Lys
145                 150                 155                 160
Ile Cys Ile Val Tyr Glu Asp Gly Ala Val Ile Val Gly Ser Val Asp
                165                 170                 175
Gly Asn Arg Ile Trp
                180


<210> 4735
<211> 300
<212> DNA
<213> Homo sapiens

<400> 4735
ntggtcttct cagtacagca tggtggctgg ggcaggccga gagaatggca tggagacgcc
60
gatgcacgag aacccggagt gggagaaggc ccgtcaggcc ctggccagca tcagcaagtc
120
aggagctgcc ggcggctctg ccaagtccag cagcaatggg cctgtggcca gtgcacagta
180
cgtgtcccag gcaaaagcct cagctttgca gcagcagcag tactaccagt ggtaccagca
240
ggacaactat gcctacccct acagctacta ctatcccatg cccccaggcc ccggcatgga
300


<210> 4736
<211> 93
<212> PRT
<213> Homo sapiens
```

<400> 4736
Met Val Ala Gly Ala Gly Arg Glu Asn Gly Met Glu Thr Pro Met His
 1   5   10   15
Glu Asn Pro Glu Trp Glu Lys Ala Arg Gln Ala Leu Ala Ser Ile Ser
            20   25   30
Lys Ser Gly Ala Ala Gly Gly Ser Ala Lys Ser Ser Ser Asn Gly Pro
        35   40   45
Val Ala Ser Ala Gln Tyr Val Ser Gln Ala Lys Ala Ser Ala Leu Gln
    50   55   60
Gln Gln Gln Tyr Tyr Gln Trp Tyr Gln Gln Asp Asn Tyr Ala Tyr Pro
65   70   75   80
Tyr Ser Tyr Tyr Tyr Pro Met Pro Pro Gly Pro Gly Met
                85   90

<210> 4737
<211> 2602
<212> DNA
<213> Homo sapiens

<400> 4737
cctaggggc tctcgcggtt ggggaacata gatggctgaa gacagaatct agagccttca
60
aataatgtgg agatgtttcc accttcaggt tccactgggc tgattccccc ctcccacttt
120
caagctcggc cctttcaac tctgccaaga atggctccca cctggctctc agacattccc
180
ctggtccaac ccccaggcca tcaagatgtc tcagagaggc ggctagacac ccagagacct
240
caagtgacca tgtgggaacg ggatgtttcc agtgacaggc aggagccagg gcggagaggc
300
aggtcctggg ggctggaggg gtcacaggcc ctgagccagc aggctgaggt gatcgttcgg
360
cagctgcaag agctgcggcg gctggaggag gaggtccggc tcctgcggga gacctcgctg
420
cagcagaaga tgaggctaga ggcccaggcc atggagctag aggctctggc acgggcggag
480
aaggccggcc gagctgaggc tgagggcctg cgtgctgctt tggctggggc tgaggttgtc
540
cggaagaact tggaagaggg gaggcagcgg gagctggaag aggttcagag gctgcaccaa
600
gagcagctgt cctctttgac acaggctcac gaggaggctc tttccagttt gaccagcaag
660
gctgagggct tggagaagtc tctgagtagt ctggaaacca gaagagcagg ggaagccaag
720
gagctggccg aggctcagag ggaggccgag ctgcttcgga agcagctgag caagacccag
780
gaagacttgg aggctcaggt gaccctggtt gagaatctaa gaaaatatgt tggggaacaa
840
gtcccttctg aggtccacag ccagacatgg gaactggagc gacagaagct tctggaaacc
900
atgcagctct tgcaggagga ccgggacagc ctgcatgcca ccgcggagct gctgcaggtg
960
cgggtgcaga gcctcacaca catcctcgcc ctgcaggagg aggagctgac caggaaggtt
1020

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caaccttcag attccctgga gcctgagttt accaggaagt gccagtccct gctgaaccgc
1080
tggcgggaga aggtgtttgc cctcatggtg cagctaaagg cccaggagct ggaacacagt
1140
gactctgtta agcagctgaa gggacaggtg gcctcactcc aggaaaaagt gacatcccag
1200
agccaggagc aggccatcct gcagcgatcc ctgcaggaca aagccgcaga ggtggaggtg
1260
gagcgtatgg gtgccaaggg cctgcagttg gagctgagcc gtgctcagga ggccaggcgt
1320
tggtggcagc agcagacagc ctcagccgag gagcagctga ggcttgtggt caatgctgtc
1380
agcagctctc agatctggct cgagaccacc atggctaagg tggaaggggc tgccgcccag
1440
cttcccagcc tcaacaaccg actcagctat gctgtccgca aggtccacac cattcggggc
1500
ctgattgctc gaaagcttgc ccttgctcag ctgcgccagg agagctgtcc cctaccacca
1560
ccggtcacag atgtgagcct tgagttgcag cagttgcggg aagaacggaa ccgcctggat
1620
gcagaactgc agctgagtgc ccgcctcatc cagcaggagg tgggccgggc tcgggagcaa
1680
ggggaggcag agcggcagca gctgagcaag gtggcccagc agctggagca ggagctgcag
1740
cagacccagg agtccctggc tagcttgggg ctgcagctgg aggtagcacg ccagggccag
1800
caggagagca cagaggaggc tgccagtctg cggcaggagc tgacccagca gcaggaactc
1860
tacgggcaag ccctgcaaga aaaggtggct gaagtggaaa ctcggctgcg ggagcaactc
1920
tcagacacag agaggaggct gaacgaggct cggagggagc atgccaaggc cgtggtctcc
1980
ttgcgccaga ttcagcgcag agccgcccag gaaaaggagc ggagccagga actcaggcgt
2040
ctgcaggagg aggcccggaa ggaggagggg cagcgactgg cccggcgctt gcaggagcta
2100
gagagggata agaacctcat gctggccacc ttgcagcagg aaggtctcct ctcccgttac
2160
aagcagcagc gactgttgac agttcttcct tccctactgg ataagaagaa atctgtggtg
2220
tccagcccca ggcctccaga gtgttcagca tctgcacctg tagcagcagc agtgcccacc
2280
agggagtcca taaaagggtc cctctctgtc ctgctcgatg acctgcagga cctgagtgaa
2340
gccatttcca agaggaagc tgtttgtcaa ggagacaacc ttgacagatg ctccagctcc
2400
aatccccaga tgagcagcta agcagctgac agttggaggg aaagccagcc tggggctgg
2460
gaggatcctg gagaagtggg tggggacaga ccagcccttc cccatcctgg ggttgccctg
2520
ggggatacca gctgagtctg aattctgctc taaataaaga cgactacaga aggaaaaaaa
2580
aaaaaaaaaa aaaaaaaaaa aa
2602
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<210> 4738
<211> 756
<212> PRT
<213> Homo sapiens

<400> 4738
Met Ala Pro Thr Trp Leu Ser Asp Ile Pro Leu Val Gln Pro Pro Gly
1   5   10   15
His Gln Asp Val Ser Glu Arg Arg Leu Asp Thr Gln Arg Pro Gln Val
                20   25   30
Thr Met Trp Glu Arg Asp Val Ser Ser Asp Arg Gln Glu Pro Gly Arg
            35   40   45
Arg Gly Arg Ser Trp Gly Leu Glu Gly Ser Gln Ala Leu Ser Gln Gln
    50   55   60
Ala Glu Val Ile Val Arg Gln Leu Gln Glu Leu Arg Arg Leu Glu Glu
65   70   75   80
Glu Val Arg Leu Leu Arg Glu Thr Ser Leu Gln Gln Lys Met Arg Leu
                85   90   95
Glu Ala Gln Ala Met Glu Leu Glu Ala Leu Ala Arg Ala Glu Lys Ala
            100   105   110
Gly Arg Ala Glu Ala Glu Gly Leu Arg Ala Ala Leu Ala Gly Ala Glu
            115   120   125
Val Val Arg Lys Asn Leu Glu Glu Gly Arg Gln Arg Glu Leu Glu Glu
    130   135   140
Val Gln Arg Leu His Gln Glu Gln Leu Ser Ser Leu Thr Gln Ala His
145   150   155   160
Glu Glu Ala Leu Ser Ser Leu Thr Ser Lys Ala Glu Gly Leu Glu Lys
                165   170   175
Ser Leu Ser Ser Leu Glu Thr Arg Arg Ala Gly Glu Ala Lys Glu Leu
            180   185   190
Ala Glu Ala Gln Arg Glu Ala Glu Leu Leu Arg Lys Gln Leu Ser Lys
    195   200   205
Thr Gln Glu Asp Leu Glu Ala Gln Val Thr Leu Val Glu Asn Leu Arg
    210   215   220
Lys Tyr Val Gly Glu Gln Val Pro Ser Glu Val His Ser Gln Thr Trp
225   230   235   240
Glu Leu Glu Arg Gln Lys Leu Leu Glu Thr Met Gln Leu Leu Gln Glu
                245   250   255
Asp Arg Asp Ser Leu His Ala Thr Ala Glu Leu Leu Gln Val Arg Val
            260   265   270
Gln Ser Leu Thr His Ile Leu Ala Leu Gln Glu Glu Glu Leu Thr Arg
    275   280   285
Lys Val Gln Pro Ser Asp Ser Leu Glu Pro Glu Phe Thr Arg Lys Cys
    290   295   300
Gln Ser Leu Leu Asn Arg Trp Arg Glu Lys Val Phe Ala Leu Met Val
305   310   315   320
Gln Leu Lys Ala Gln Glu Leu Glu His Ser Asp Ser Val Lys Gln Leu
            325   330   335
Lys Gly Gln Val Ala Ser Leu Gln Glu Lys Val Thr Ser Gln Ser Gln
            340   345   350
Glu Gln Ala Ile Leu Gln Arg Ser Leu Gln Asp Lys Ala Ala Glu Val
    355   360   365
Glu Val Glu Arg Met Gly Ala Lys Gly Leu Gln Leu Glu Leu Ser Arg

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      370                    375                    380
Ala Gln Glu Ala Arg Arg Trp Trp Gln Gln Gln Thr Ala Ser Ala Glu
385                    390                    395                    400
Glu Gln Leu Arg Leu Val Val Asn Ala Val Ser Ser Ser Gln Ile Trp
               405                    410                    415
Leu Glu Thr Thr Met Ala Lys Val Glu Gly Ala Ala Ala Gln Leu Pro
               420                    425                    430
Ser Leu Asn Asn Arg Leu Ser Tyr Ala Val Arg Lys Val His Thr Ile
               435                    440                    445
Arg Gly Leu Ile Ala Arg Lys Leu Ala Leu Ala Gln Leu Arg Gln Glu
      450                    455                    460
Ser Cys Pro Leu Pro Pro Pro Val Thr Asp Val Ser Leu Glu Leu Gln
465                    470                    475                    480
Gln Leu Arg Glu Glu Arg Asn Arg Leu Asp Ala Glu Leu Gln Leu Ser
               485                    490                    495
Ala Arg Leu Ile Gln Gln Glu Val Gly Arg Ala Arg Glu Gln Gly Glu
               500                    505                    510
Ala Glu Arg Gln Gln Leu Ser Lys Val Ala Gln Gln Leu Glu Gln Glu
               515                    520                    525
Leu Gln Gln Thr Gln Glu Ser Leu Ala Ser Leu Gly Leu Gln Leu Glu
               530                    535                    540
Val Ala Arg Gln Gly Gln Gln Glu Ser Thr Glu Glu Ala Ala Ser Leu
545                    550                    555                    560
Arg Gln Glu Leu Thr Gln Gln Gln Glu Leu Tyr Gly Gln Ala Leu Gln
               565                    570                    575
Glu Lys Val Ala Glu Val Glu Thr Arg Leu Arg Glu Gln Leu Ser Asp
               580                    585                    590
Thr Glu Arg Arg Leu Asn Glu Ala Arg Arg Glu His Ala Lys Ala Val
               595                    600                    605
Val Ser Leu Arg Gln Ile Gln Arg Arg Ala Ala Gln Glu Lys Glu Arg
               610                    615                    620
Ser Gln Glu Leu Arg Arg Leu Gln Glu Glu Ala Arg Lys Glu Glu Gly
625                    630                    635                    640
Gln Arg Leu Ala Arg Arg Leu Gln Glu Leu Glu Arg Asp Lys Asn Leu
               645                    650                    655
Met Leu Ala Thr Leu Gln Gln Glu Gly Leu Leu Ser Arg Tyr Lys Gln
               660                    665                    670
Gln Arg Leu Leu Thr Val Leu Pro Ser Leu Leu Asp Lys Lys Lys Ser
               675                    680                    685
Val Val Ser Ser Pro Arg Pro Pro Glu Cys Ser Ala Ser Ala Pro Val
               690                    695                    700
Ala Ala Ala Val Pro Thr Arg Glu Ser Ile Lys Gly Ser Leu Ser Val
705                    710                    715                    720
Leu Leu Asp Asp Leu Gln Asp Leu Ser Glu Ala Ile Ser Lys Glu Glu
               725                    730                    735
Ala Val Cys Gln Gly Asp Asn Leu Asp Arg Cys Ser Ser Ser Asn Pro
               740                    745                    750
Gln Met Ser Ser
               755
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<210> 4739
<211> 684
<212> DNA
<213> Homo sapiens

<400> 4739

gtgcacatgg ggtgcattag gcttgatttg tactctgcag actatggggg aagctgagga
60
ggaagacttg accagtcttg gtgatgagaa ggccttcacc ctatgaacac aaccaagtct
120
tagccctctc tcctgctcct ttaaactctg aacttctagg atgggagaat gggaactttt
180
gcaggttgag attcatagtg aaatcgggtc aagaagtgat cagatgcaaa gcacagggca
240
gttcattact ataccatggc tgaggtcttc ctgggcacca ggccctgggc tcagcacttg
300
gctcagtctg caccttggac cctgccagag ccctccacag caggtgctct caggcaaggc
360
tgtgtgttgc tggccagacg ccttctgacc agcgtgcttt cttgaccaca gatcccttgg
420
ccaagcagga gggaaccatt agcagcctga ggagctggct ggctgggagc ctcggggacc
480
gcccagcctt gctcccagct cacccacaag atgtggacag ctcttgtgct catttggatt
540
ttctccttgt ccttatctga aagccatgcg gcatccaacg atccacgtaa gtgagaaagc
600
tgtgtgactg ctggatgggc ccacggtggc cacaaagcat gctgagccct tgaaagcagc
660
atctgcaaac ccaggccaac gcgt
684

<210> 4740
<211> 119
<212> PRT
<213> Homo sapiens

<400> 4740
Met Leu Leu Ser Arg Ala Gln His Ala Leu Trp Pro Pro Trp Ala His
1   5   10   15
Pro Ala Val Thr Gln Leu Ser His Leu Arg Gly Ser Leu Asp Ala Ala
            20   25   30
Trp Leu Ser Asp Lys Asp Lys Glu Lys Ile Gln Met Ser Thr Arg Ala
        35   40   45
Val His Ile Leu Trp Val Ser Trp Glu Gln Gly Trp Ala Val Pro Glu
    50   55   60
Ala Pro Ser Gln Pro Ala Pro Gln Ala Ala Asn Gly Ser Leu Leu Leu
65   70   75   80
Gly Gln Gly Ile Cys Gly Gln Glu Ser Thr Leu Val Arg Arg Arg Leu
                85   90   95
Ala Ser Asn Thr Gln Pro Cys Leu Arg Ala Pro Ala Val Glu Gly Ser
                100   105   110
Gly Arg Val Gln Gly Ala Asp
            115

<210> 4741
<211> 411
<212> DNA
<213> Homo sapiens

<400> 4741
aaatttactt ctctcaggtc aacaggtgtt tttcttttctt ttttttttttt tttttcccttt
60
ttttttctta aaaaaaaaaa aggggttttt ctttgccccc cccgttcccc ccccttcccc
120
ttccgaaaaa aagagggggaa ttttttaaaa aacccgaaag gggggaaggg ggggggtata
180
aaagataaaa tttggttttt tgggggggaa aatttggaca ccccacccctc gggtttttttt
240
tccccacccc aaaaaatttt aaaagggggc cctaaaaaaa attttttctt taatttccaa
300
ataaaaaaaa aatggggttc caaaatcatt gaaaaatagg ggggactcca aaaccttgaa
360
ttttcccaag ggggaccact aaaatttacc cctttttttgg ggttttggggg g
411

<210> 4742
<211> 109
<212> PRT
<213> Homo sapiens

<400> 4742

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Met Ile Leu Glu Pro His Phe Phe Phe Ile Trp Lys Leu Lys Lys Lys
 1               5                  10                  15
Phe Phe Leu Gly Pro Pro Phe Lys Ile Phe Trp Gly Gly Glu Lys Lys
            20                  25                  30
Pro Glu Gly Gly Val Ser Lys Phe Ser Pro Pro Lys Asn Gln Ile Leu
        35                  40                  45
Ser Phe Ile Pro Pro Pro Phe Pro Pro Phe Gly Phe Phe Lys Lys Phe
        50                  55                  60
Pro Ser Phe Phe Arg Lys Gly Lys Gly Gly Glu Arg Gly Gly Gln Arg
65                  70                  75                  80
Lys Thr Pro Phe Phe Phe Leu Arg Lys Lys Arg Glu Lys Lys Lys Lys
                85                  90                  95
Lys Glu Arg Lys Thr Pro Val Asp Leu Arg Glu Val Asn
            100                 105
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<210> 4743
<211> 473
<212> DNA
<213> Homo sapiens

<400> 4743
gccttgaggt ggaaggcggg aaaatggcgg attcctcggg gcgaggcgct gggaagcctg
60
caaccggccc cacaaattct agcagtgcca agaagaagga taaaagagtt caaggtggaa
120
gagtgattga gtcccggtat ctgcagtatg aaaagaagac aacccaaaag gctcctgcag
180
gagatgggtc acagacccga gggaagatgt ctgaaggtgg aaggaaatcc agcctgctcc
240
agaaaagcaa agcagatagc agtggggtcg gaaagggtga cctgcagtcc acgttgctgg
300
```

aagggcatgg cacagctcca cctgacctgg atctctctgc tattaatgac aaaagcatcg
360
tcaaaaagac gccacagtta gcaaaaacaa tatcaaagaa acctgagtca acatcatttt
420
ctgcccctcg gaaaaagagc ccggatttat ctgaagcgaa tggaatgatg gag
473


<210> 4744
<211> 150
<212> PRT
<213> Homo sapiens


<400> 4744
Met Ala Asp Ser Ser Gly Arg Gly Ala Gly Lys Pro Ala Thr Gly Pro
  1               5                  10                  15
Thr Asn Ser Ser Ser Ala Lys Lys Lys Asp Lys Arg Val Gln Gly Gly
                 20                  25                  30
Arg Val Ile Glu Ser Arg Tyr Leu Gln Tyr Glu Lys Lys Thr Thr Gln
         35                  40                  45
Lys Ala Pro Ala Gly Asp Gly Ser Gln Thr Arg Gly Lys Met Ser Glu
     50                  55                  60
Gly Gly Arg Lys Ser Ser Leu Leu Gln Lys Ser Lys Ala Asp Ser Ser
 65                  70                  75                  80
Gly Val Gly Lys Gly Asp Leu Gln Ser Thr Leu Leu Glu Gly His Gly
                 85                  90                  95
Thr Ala Pro Pro Asp Leu Asp Leu Ser Ala Ile Asn Asp Lys Ser Ile
                100                 105                 110
Val Lys Lys Thr Pro Gln Leu Ala Lys Thr Ile Ser Lys Lys Pro Glu
        115                 120                 125
Ser Thr Ser Phe Ser Ala Pro Arg Lys Lys Ser Pro Asp Leu Ser Glu
    130                 135                 140
Ala Asn Gly Met Met Glu
145                 150


<210> 4745
<211> 666
<212> DNA
<213> Homo sapiens


<400> 4745
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60
gagcagctgg atcaccttgg tgaagttcag acggaatcag caggaattca gcgtgcacag
120
attcagaaag aactttggcg aattcaggat gtcatggaag ggctgagtaa acataagcag
180
caaagaggta ctacagaaat aggtatgata ggatcaaagc ctttctcaac agttaagtac
240
aaaaatgagg gtccagatta tagactctac aagagtgaac cagagttaac aacagtggca
300
gaagttgatg aatctaatgg agaagaaaaa tcagaacctg tttcagagat agaaacttca
360
gttgttaaag gttcccactt tcctgttgga gtagtccctc caagagcaaa atcaccaaca
420

cccgaatctt cgacaatagc ttcctatgta accttgagga aaactaagaa gatgatggat
480
ctaagaacgg aaagaccaag aagtgcagtg gaacagctct gtttggctga aagtactcga
540
ccaaggatga ctgtggaaga gcaaatggaa agaataagaa gatatcaaca agcgtgcctg
600
agggagaaga aaaaagggtt aaatgttatc ggtgcttcag accagtcacc cttacaaagc
660
ccttaa
666


<210> 4746
<211> 221
<212> PRT
<213> Homo sapiens

<400> 4746
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Ala Trp Arg Glu Tyr Asp Lys Leu Glu Tyr Asp Val Thr Val Thr Arg
1   5   10   15
Asn Gln Met Gln Glu Gln Leu Asp His Leu Gly Glu Val Gln Thr Glu
            20   25   30
Ser Ala Gly Ile Gln Arg Ala Gln Ile Gln Lys Glu Leu Trp Arg Ile
        35   40   45
Gln Asp Val Met Glu Gly Leu Ser Lys His Lys Gln Gln Arg Gly Thr
    50   55   60
Thr Glu Ile Gly Met Ile Gly Ser Lys Pro Phe Ser Thr Val Lys Tyr
65   70   75   80
Lys Asn Glu Gly Pro Asp Tyr Arg Leu Tyr Lys Ser Glu Pro Glu Leu
                85   90   95
Thr Thr Val Ala Glu Val Asp Glu Ser Asn Gly Glu Glu Lys Ser Glu
            100   105   110
Pro Val Ser Glu Ile Glu Thr Ser Val Val Lys Gly Ser His Phe Pro
        115   120   125
Val Gly Val Val Pro Pro Arg Ala Lys Ser Pro Thr Pro Glu Ser Ser
    130   135   140
Thr Ile Ala Ser Tyr Val Thr Leu Arg Lys Thr Lys Lys Met Met Asp
145   150   155   160
Leu Arg Thr Glu Arg Pro Arg Ser Ala Val Glu Gln Leu Cys Leu Ala
                165   170   175
Glu Ser Thr Arg Pro Arg Met Thr Val Glu Glu Gln Met Glu Arg Ile
            180   185   190
Arg Arg Tyr Gln Gln Ala Cys Leu Arg Glu Lys Lys Lys Gly Leu Asn
        195   200   205
Val Ile Gly Ala Ser Asp Gln Ser Pro Leu Gln Ser Pro
    210   215   220
```

<210> 4747
<211> 1091
<212> DNA
<213> Homo sapiens

<400> 4747
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60

acgcatactg acgccaaaat ccgtgctgaa aatggaacag ggtccagccc tcggggtcct
120
ggctgcagcc tccggcactt tgcctgcgaa cagaacctgc tgtcgcggcc agatggctct
180
gcttccttcc tgcaaggtga cacctctgtc ctggcgggtg tgtacgggcc ggccgaggtg
240
aaggtcagca aagagatttt caacaaggcc acactcgaag tgatcctgag gccgaagatt
300
gggctgcctg caggggtcag tggatggcag tcaggccttg ccttcttccc actggaatct
360
tccatcatcc ctgcaggtgt tgcagagaag agccgggagc ggctgatcag gaacacgtgc
420
gaggcggtgg tgctgggcac gttgcacccc cgcacctcca tcaccgtggt gctgcaggtt
480
gtcagcgatg ccggctctct cctggcctgt tgtctgaatg ccgcctgcat ggcattggtg
540
gatgcaggtg tgcccatgcg ggctctcttc tgtggggtcg cctgcgccct ggactctgat
600
gggaccctcg tgctggatcc tacatccaag caagaaaagg aggcccgggc agtcctgacc
660
tttgccctgg acagcgtgga acggaagctg ctgatgtcca gcaccaaggg gctctactca
720
gacactgagc tccagcagtg cctggctgcg gcccaggccg cttcgcaaca cgtcttccgt
780
ttctaccggg aatcgctgca gaggcgttac tccaagagct gaggcaagct ggggcaaggg
840
gccgctccca ttgcctccac ccactcaccc cctacagcct gaagcaaacc agcagcccag
900
ccttgcctct ctgacccatg ggctccttga gcctgcagct ctgtaaccac agggctcctg
960
tggggaggcc ttggcctgtg acagccccca ggcctggggg cacagatccc cccagcaagg
1020
ataacattca aaggagctca catttatgga atggatgaat caataaatta attcacttta
1080
aaaaaaaaaa a
1091

&lt;210&gt; 4748
&lt;211&gt; 273
&lt;212&gt; PRT
&lt;213&gt; Homo sapiens

&lt;400&gt; 4748
Xaa Cys Gln Ala Glu Val Thr Thr Ala Ser Ala Arg Gly Leu Gly Ala
1               5                   10                  15
Met Glu Glu Glu Thr His Thr Asp Ala Lys Ile Arg Ala Glu Asn Gly
                20                  25                  30
Thr Gly Ser Ser Pro Arg Gly Pro Gly Cys Ser Leu Arg His Phe Ala
            35                  40                  45
Cys Glu Gln Asn Leu Leu Ser Arg Pro Asp Gly Ser Ala Ser Phe Leu
        50                  55                  60
Gln Gly Asp Thr Ser Val Leu Ala Gly Val Tyr Gly Pro Ala Glu Val
65                  70                  75                  80
Lys Val Ser Lys Glu Ile Phe Asn Lys Ala Thr Leu Glu Val Ile Leu

```
                  85                     90                     95
Arg Pro Lys Ile Gly Leu Pro Ala Gly Val Ser Gly Trp Gln Ser Gly
            100                     105                     110
Leu Ala Phe Phe Pro Leu Glu Ser Ser Ile Ile Pro Ala Gly Val Ala
            115                     120                     125
Glu Lys Ser Arg Glu Arg Leu Ile Arg Asn Thr Cys Glu Ala Val Val
            130                     135                     140
Leu Gly Thr Leu His Pro Arg Thr Ser Ile Thr Val Val Leu Gln Val
145                     150                     155                     160
Val Ser Asp Ala Gly Ser Leu Leu Ala Cys Cys Leu Asn Ala Ala Cys
                  165                     170                     175
Met Ala Leu Val Asp Ala Gly Val Pro Met Arg Ala Leu Phe Cys Gly
                  180                     185                     190
Val Ala Cys Ala Leu Asp Ser Asp Gly Thr Leu Val Leu Asp Pro Thr
                  195                     200                     205
Ser Lys Gln Glu Lys Glu Ala Arg Ala Val Leu Thr Phe Ala Leu Asp
      210                     215                     220
Ser Val Glu Arg Lys Leu Leu Met Ser Ser Thr Lys Gly Leu Tyr Ser
225                     230                     235                     240
Asp Thr Glu Leu Gln Gln Cys Leu Ala Ala Ala Gln Ala Ala Ser Gln
                  245                     250                     255
His Val Phe Arg Phe Tyr Arg Glu Ser Leu Gln Arg Arg Tyr Ser Lys
                  260                     265                     270
Ser
```

```
<210> 4749
<211> 2196
<212> DNA
<213> Homo sapiens

<400> 4749
nnacgcgtct catccatggc ttccgcggac tcgcgccggc tggcagatgg cggcggtgcc
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gggggcacct tccagcccta cctagacacc ttgcggcagg agctgcagca gacggaccca
120
acgctgttgt cagtagtggt ggcggttctt gcggtgctgc tgacgctagt cttctggaag
180
ttaatccgga gcagaaggag cagtcagaga gctgttcttc ttgttggcct ttgtgattcc
240
gggaaaacgt tgctctttgt caggttgtta acaggccttt atagagacac tcagacgtcc
300
attactgaca gctgtgctgt atacagagtc aacaataaca ggggcaatag tctgaccttg
360
attgaccttc ccggccatga gagtttgagg cttcagttct tagagcggtt taagtcttca
420
gccagggcta ttgtgtttgt tgtggatagt gcagcattcc agcgagaggt gaaagatgtg
480
gctgagtttc tgtatcaagt cctcattgac agtatgggtc tgaagaatac accatcattc
540
ttaatagcct gcaataagca agatattgca atggcaaaat cagcaaagtt aattcaacag
600
cagctggaga aagaactcaa caccttacga gttacccgtt ctgctgcccc cagcacactg
660
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gacagttcca gcactgcccc tgctcagctg gggaagaaag gcaaagagtt tgaattctca
720
cagttgcccc tcaaagtgga gttcctggag tgcagtgcca agggtggaag aggggacgtg
780
ggctctgctg acatccagga cttggagaaa tggctggcta aaattgcctg agaggcagct
840
ctaaagcaca agacctggat gtgtgacaca cagttttgga aaaaggtctg tggtagtctg
900
gagttgatga ggaagggggta caagatgtgg ttagaaacat ttctttgttc tggaaacaaa
960
gtactgttga aaccagcttg gaattttttt tttttttttt ttaagttcag ttctccctta
1020
tggctgcctt tcaaacaagt accttttatc tgatgcctgt atcttccctt tgttaaggtg
1080
taacttgatg tagggtcaag gtttttgtga caacaggcag actccacaca gagaggatat
1140
gatgagaata tggccatcac ctgaaaagtt ttcttatctt ctgtgctttt ggtccctgga
1200
aacaaatccg cctatgtatg aagctagttg atttccagtt gcactatttc cagttgcctc
1260
tgaagttcac aggcaataca ttgtctagtc ctttgcgaat ttctctgatt tgtgggcaca
1320
gttatgaagt ttccccacat gtgaagacag gtacaaaata gcagagccaa gcagacagtg
1380
ggtctattct tcattagctc agtgacttgt ccacactcgt cttagcactt acgtttcaaa
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agcttgtcac aaacccttgg agtcattccc agataataga actggaaatg ataaatcccc
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taatgccaag ggtctagtgt gttcttagtg gttatactgg gaagtgtgtg gagatttagg
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tgctgctctg ctgctctgga tggctgaagg ctcctgggcc atcttcatgt gctgcttgaa
1620
gagctcctat tttgtactcc tggctagaat gctgtggaac aaatacaaag tgaaaaaagt
1680
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1740
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1860
gtacaaatga gtgcacatgt caggactcag gtctaactcc ttgtctcctg agcctaaaga
1920
ttgcaacata cacaagaaca cactcctatt cctaccccac acactcaggg acaagcccaa
1980
ctaaagctta caaggagacc agggtggctc tgtccagggg agaagccagt tatggaacag
2040
tgcattgaga gccatggtag gagaggccca cagttctctg gagcatgcag caggggcacc
2100
ccacctggcc ttgaggatca gggggagtca aaggataaag catggggctg atgacgtctg
2160
agggagtgtg atcctccatg tatggcctct gcctgc
2196

<210> 4750

<211> 276
<212> PRT
<213> Homo sapiens

<400> 4750
Xaa Arg Val Ser Ser Met Ala Ser Ala Asp Ser Arg Arg Leu Ala Asp
1   5   10   15
Gly Gly Gly Ala Gly Gly Thr Phe Gln Pro Tyr Leu Asp Thr Leu Arg
            20   25   30
Gln Glu Leu Gln Gln Thr Asp Pro Thr Leu Leu Ser Val Val Val Ala
        35   40   45
Val Leu Ala Val Leu Leu Thr Leu Val Phe Trp Lys Leu Ile Arg Ser
    50   55   60
Arg Arg Ser Ser Gln Arg Ala Val Leu Leu Val Gly Leu Cys Asp Ser
65   70   75   80
Gly Lys Thr Leu Leu Phe Val Arg Leu Leu Thr Gly Leu Tyr Arg Asp
            85   90   95
Thr Gln Thr Ser Ile Thr Asp Ser Cys Ala Val Tyr Arg Val Asn Asn
            100   105   110
Asn Arg Gly Asn Ser Leu Thr Leu Ile Asp Leu Pro Gly His Glu Ser
        115   120   125
Leu Arg Leu Gln Phe Leu Glu Arg Phe Lys Ser Ser Ala Arg Ala Ile
    130   135   140
Val Phe Val Val Asp Ser Ala Ala Phe Gln Arg Glu Val Lys Asp Val
145   150   155   160
Ala Glu Phe Leu Tyr Gln Val Leu Ile Asp Ser Met Gly Leu Lys Asn
            165   170   175
Thr Pro Ser Phe Leu Ile Ala Cys Asn Lys Gln Asp Ile Ala Met Ala
        180   185   190
Lys Ser Ala Lys Leu Ile Gln Gln Gln Leu Glu Lys Glu Leu Asn Thr
    195   200   205
Leu Arg Val Thr Arg Ser Ala Ala Pro Ser Thr Leu Asp Ser Ser Ser
    210   215   220
Thr Ala Pro Ala Gln Leu Gly Lys Lys Gly Lys Glu Phe Glu Phe Ser
225   230   235   240
Gln Leu Pro Leu Lys Val Glu Phe Leu Glu Cys Ser Ala Lys Gly Gly
            245   250   255
Arg Gly Asp Val Gly Ser Ala Asp Ile Gln Asp Leu Glu Lys Trp Leu
            260   265   270
Ala Lys Ile Ala
        275

<210> 4751
<211> 2777
<212> DNA
<213> Homo sapiens

<400> 4751
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ctcctcagcc catcaaagta ccacagttta tccccctcc tagactcact ccacgtccaa
120
actttcttcc acaggttcga cccaagcctg tggcccagaa taacattcct attgccccca
180

gcaccacctc ccatgctcgc agctcctcag cttatccaga ggcccgtcat gctgaccaag
240
ttcacccca caacccttcc cacatcccag aattccatcc accccgtccg tgtcgtcaat
300
gggcagactg caaccatagc caaaacgttc cccatggccc agctcaccag cattgtgata
360
gctactccag ggaccagact cgctggacct caaactgtac agcttagcaa gccaagtctt
420
gaaaaacaga cagttaaatc tcacacagaa acagatgaga aacaaacaga gagccgcacc
480
atcaccccac ctgctgcacc caaaccaaaa cgggaggaga accctcagaa acttgccttc
540
atggtgtctc tagggttggt aacacatgac catctagaag aaatccaaag caagaggcaa
600
gagcgaaaaa gaagaacaac agcaaatccg gtctacagtg gagcagtctt tgagccagag
660
cgtaagaaga gtgcagtgac atacctaaac agcacaatgc accctgggac ccggaagaga
720
gccaatgagg aacactggcc aaagggtgat attcatgagg attttttgcag cgtttgcaga
780
aaaagtggcc agttactgat gtgcgacaca tgttcccgtg tatatcattt ggactgctta
840
gaccccctc tgaaaacaat tcccaagggc atgtggatct gtcccagatg tcaggaccag
900
atgctgaaga aggaagaagc aattccatgg ncctggaact ttagcaattg ttcattccta
960
tattgcctac aaagcagcaa aagaagaaga gaaacagaag ttacttaaat ggagttcaga
1020
tttaaaacaa gaacgagaac aactagagca aaaggtgaaa cagctcagca attccataag
1080
taaatgcatg gaaatgaaga acaccatcct ggcccggcag aaggagatgc acagctccct
1140
ggagaaggta aaacagctga ttcgcctcat ccacggcatc gacctctcca aacctgtaga
1200
ctctgaggcc actgtggggg gccatctcca atggcccgga ctgcacccc cctgccaatg
1260
ccgccacctc cacgccggcc ccttcccct cctcccagag ctgcacagcg aactgtaacc
1320
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1380
ggagaacaga acactgaaga ctctagaaaa gcaaagccgg atttctggaa agtgcagaat
1440
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1980
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2160
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2580
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<210> 4752
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<212> PRT
<213> Homo sapiens

<400> 4752
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Leu Leu Asp Ser Leu His Val Gln Thr Phe Phe His Arg Phe Asp Pro
            35                  40                  45
Ser Leu Trp Pro Arg Ile Thr Phe Leu Leu Pro Pro Ala Pro Pro Pro
        50                  55                  60
Met Leu Ala Ala Pro Gln Leu Ile Gln Arg Pro Val Met Leu Thr Lys
65                  70                  75                  80
Phe Thr Pro Thr Thr Leu Pro Thr Ser Gln Asn Ser Ile His Pro Val
                85                  90                  95
Arg Val Val Asn Gly Gln Thr Ala Thr Ile Ala Lys Thr Phe Pro Met
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                    100                  105                  110
Ala Gln Leu Thr Ser Ile Val Ile Ala Thr Pro Gly Thr Arg Leu Ala
        115                  120                  125
Gly Pro Gln Thr Val Gln Leu Ser Lys Pro Ser Leu Glu Lys Gln Thr
    130                  135                  140
Val Lys Ser His Thr Glu Thr Asp Glu Lys Gln Thr Glu Ser Arg Thr
145                  150                  155                  160
Ile Thr Pro Pro Ala Ala Pro Lys Pro Lys Arg Glu Glu Asn Pro Gln
                165                  170                  175
Lys Leu Ala Phe Met Val Ser Leu Gly Leu Val Thr His Asp His Leu
            180                  185                  190
Glu Glu Ile Gln Ser Lys Arg Gln Glu Arg Lys Arg Arg Thr Thr Ala
        195                  200                  205
Asn Pro Val Tyr Ser Gly Ala Val Phe Glu Pro Glu Arg Lys Lys Ser
    210                  215                  220
Ala Val Thr Tyr Leu Asn Ser Thr Met His Pro Gly Thr Arg Lys Arg
225                  230                  235                  240
Ala Asn Glu Glu His Trp Pro Lys Gly Asp Ile His Glu Asp Phe Cys
                245                  250                  255
Ser Val Cys Arg Lys Ser Gly Gln Leu Leu Met Cys Asp Thr Cys Ser
            260                  265                  270
Arg Val Tyr His Leu Asp Cys Leu Asp Pro Pro Leu Lys Thr Ile Pro
    275                  280                  285
Lys Gly Met Trp Ile Cys Pro Arg Cys Gln Asp Gln Met Leu Lys Lys
    290                  295                  300
Glu Glu Ala Ile Pro Trp Xaa Trp Asn Phe Ser Asn Cys Ser Phe Leu
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Tyr Cys Leu Gln Ser Ser Lys Arg Arg Arg Glu Thr Glu Val Thr
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<210> 4753
<211> 5298
<212> DNA
<213> Homo sapiens

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240
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300
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420
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480
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540

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720
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780
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1080
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1140
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1980
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2160
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3780
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<210> 4754

<211> 748
<212> PRT
<213> Homo sapiens

<400> 4754

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Glu	Glu	Glu	Phe	Glu	Cys	Tyr	Pro	Pro	Gly	Met	Lys	Val	Gln	Val	Arg

20 25 30

Tyr Gly Arg Gly Lys Asn Gln Lys Met Tyr Glu Ala Ser Ile Lys Asp
35 40 45

Ser Asp Val Glu Gly Gly Glu Val Leu Tyr Leu Val His Tyr Cys Gly
50 55 60

Trp Asn Val Arg Tyr Asp Glu Trp Ile Lys Ala Asp Lys Ile Val Arg
65 70 75 80

Pro Ala Asp Lys Asn Val Pro Lys Ile Lys His Arg Lys Lys Ile Lys
85 90 95

Asn Lys Leu Asp Lys Glu Lys Asp Lys Asp Glu Lys Tyr Ser Pro Lys
100 105 110

Asn Cys Lys Leu Arg Arg Leu Ser Lys Pro Pro Phe Gln Thr Asn Pro
115 120 125

Ser Pro Glu Met Val Ser Lys Leu Asp Leu Thr Asp Ala Lys Asn Ser
130 135 140

Asp Thr Ala His Ile Lys Ser Ile Glu Ile Thr Ser Ile Leu Asn Gly
145 150 155 160

Leu Gln Ala Ser Glu Ser Ser Ala Glu Asp Ser Glu Gln Glu Asp Glu
165 170 175

Arg Gly Ala Gln Asp Met Asp Asn Asn Gly Lys Glu Glu Ser Lys Ile
180 185 190

Asp His Leu Thr Asn Asn Arg Asn Asp Leu Ile Ser Lys Glu Glu Gln
195 200 205

Asn Ser Ser Ser Leu Leu Glu Glu Asn Lys Val His Ala Asp Leu Val
210 215 220

Ile Ser Lys Pro Val Ser Lys Ser Pro Glu Arg Leu Arg Lys Asp Ile
225 230 235 240

Glu Val Leu Ser Glu Asp Thr Asp Tyr Glu Glu Asp Glu Val Thr Lys
245 250 255

Lys Arg Lys Asp Val Lys Lys Asp Thr Thr Asp Lys Ser Ser Lys Pro
260 265 270

Gln Ile Lys Arg Gly Lys Arg Arg Tyr Cys Asn Thr Glu Glu Cys Leu
275 280 285

Lys Thr Gly Ser Pro Gly Lys Lys Glu Glu Lys Ala Lys Asn Lys Glu
290 295 300

Ser Leu Cys Met Glu Asn Ser Ser Thr Ala Leu Gln Met Lys Met Lys
305 310 315 320

Lys Asn Lys Ala Lys Met Thr Pro Thr Lys Lys Tyr Asn Gly Leu Glu
325 330 335

Glu Lys Arg Lys Ser Leu Arg Thr Thr Gly Phe Tyr Ser Gly Phe Ser
340 345 350

Glu Val Ala Glu Lys Arg Ile Lys Leu Leu Asn Asn Ser Asp Glu Arg
355 360 365

Leu Gln Asn Ser Arg Ala Lys Asp Arg Lys Asp Val Trp Ser Ser Ile
370 375 380

Gln Gly Gln Trp Pro Lys Lys Thr Leu Lys Glu Leu Phe Ser Asp Ser

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385                     390                     395                     400
Asp Thr Glu Ala Ala Ala Ser Pro Pro His Pro Ala Pro Glu Glu Gly
                405                     410                     415
Val Ala Glu Glu Ser Leu Gln Thr Val Ala Glu Glu Glu Ser Cys Ser
                420                     425                     430
Pro Ser Val Glu Leu Glu Lys Pro Pro Pro Val Asn Val Asp Ser Lys
                435                     440                     445
Pro Ile Glu Glu Lys Thr Val Glu Val Asn Asp Arg Lys Ala Glu Phe
                450                     455                     460
Pro Ser Ser Gly Ser Asn Ser Val Leu Asn Thr Pro Pro Thr Thr Pro
        465                     470                     475                     480
Glu Ser Pro Ser Ser Val Thr Val Thr Glu Gly Ser Arg Gln Gln Ser
                        485                     490                     495
Ser Val Thr Val Ser Glu Pro Leu Ala Pro Asn Gln Glu Glu Val Arg
                500                     505                     510
Ser Ile Lys Ser Glu Thr Asp Ser Thr Ile Glu Val Asp Ser Val Ala
                515                     520                     525
Gly Glu Leu Gln Asp Leu Gln Ser Glu Gly Asn Ser Ser Pro Ala Gly
        530                     535                     540
Phe Asp Ala Ser Val Ser Ser Ser Ser Ser Asn Gln Pro Glu Pro Glu
545                     550                     555                     560
His Pro Glu Lys Ala Cys Thr Gly Gln Lys Arg Val Lys Asp Ala Gln
                565                     570                     575
Gly Gly Gly Ser Ser Ser Lys Lys Gln Lys Arg Ser His Lys Ala Thr
                580                     585                     590
Val Val Asn Asn Thr Lys Lys Gly Lys Gly Thr Asn Ser Ser Asp Ser
                595                     600                     605
Glu Glu Leu Ser Ala Gly Glu Ser Ile Thr Lys Ser Gln Pro Val Lys
        610                     615                     620
Ser Val Ser Thr Gly Met Lys Ser His Ser Thr Lys Ser Pro Ala Arg
625                     630          .           635                     640
Thr Gln Ser Pro Gly Lys Cys Gly Lys Asn Gly Asp Lys Asp Pro Asp
                645                     650                     655
Leu Lys Glu Pro Ser Asn Arg Leu Pro Lys Val Tyr Lys Trp Ser Phe
                660                     665                     670
Gln Met Ser Asp Leu Glu Asn Met Thr Ser Ala Glu Arg Ile Thr Ile
                675                     680                     685
Leu Gln Glu Lys Leu Gln Glu Asn Gln Lys His Tyr Leu Ser Leu Lys
                690                     695                     700
Ser Glu Val Ala Ser Ile Asp Arg Arg Arg Lys Arg Leu Lys Lys Lys
705                     710                     715                     720
Glu Arg Glu Ser Ala Ala Thr Ser Ser Ser Ser Ser Ser Pro Ser Ser
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Ser Ser Ile Asn Ser Cys Cys Tyr Val Asn Phe Ser
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<210> 4755
<211> 2093
<212> DNA
<213> Homo sapiens

<400> 4755
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120
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180
gccctctggt ttctgagtgg gacgtggaga gagggaggag atggaagttg gggtctttat
240
tcccacagca ccccacccct accccgcag acttaactaa ggctggcagt ggccttcaac
300
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360
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420
acaccattat aaataagtta atgatttatt gtgtcgtctt caaattactg aagtggggag
480
tgtgccttct gtttcctgtt gtgacgctgc agataatagc aagtaagtta aacagtaagt
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720
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1680
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<210> 4756
<211> 188
<212> PRT
<213> Homo sapiens
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            20                  25                  30
Ser Glu Asp Gly Thr Leu Arg Ser Leu Glu Pro Glu Pro Gln Gln Ser
        35                  40                  45
Leu Glu Asp Gly Ser Pro Ala Lys Gly Glu Pro Ser Gln Ala Trp Arg
    50                  55                  60
Glu Gln Arg Arg Pro Ser Thr Ser Ser Ala Ser Gly Gln Trp Ser Pro
65                  70                  75                  80
Thr Pro Glu Trp Val Leu Ser Trp Lys Ser Lys Leu Pro Leu Gln Thr
                85                  90                  95
Ile Met Arg Leu Leu Gln Val Leu Val Pro Gln Val Glu Lys Ile Cys
            100                 105                 110
Ile Asp Lys Gly Leu Thr Asp Glu Ser Glu Ile Leu Arg Phe Leu Gln
            115                 120                 125
His Gly Thr Leu Val Gly Leu Leu Pro Val Pro His Pro Ile Leu Ile
        130                 135                 140
Arg Lys Tyr Gln Ala Asn Ser Gly Thr Ala Met Trp Phe Arg Thr Tyr
145                 150                 155                 160
Met Trp Gly Val Ile Tyr Leu Arg Asn Val Asp Pro Pro Val Trp Tyr
                165                 170                 175
Asp Thr Asp Val Lys Leu Phe Glu Ile Gln Arg Val
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<210> 4757
<211> 272
<212> DNA
<213> Homo sapiens
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<400> 4757
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180
tcacatctca aggcctgccg agctgtggcc ttctctgaag atgggcagaa gctcattact
240
gtctccaagg acaaagccat ccatgttcta ga
272

<210> 4758
<211> 90
<212> PRT
<213> Homo sapiens

<400> 4758
Xaa Met Glu Ala Pro Thr Arg Ile Arg Asp Thr Pro Glu Asp Ile Val
 1   5   10   15
Leu Glu Ala Pro Ala Ser Gly Leu Ala Phe His Pro Ala Arg Asp Leu
                20   25   30
Leu Ala Ala Gly Asp Val Asp Gly Asp Val Phe Val Phe Ser Tyr Ser
        35   40   45
Cys Gln Glu Gly Glu Thr Lys Glu Leu Val Ile Arg Ser His Leu Lys
    50   55   60
Ala Cys Arg Ala Val Ala Phe Ser Glu Asp Gly Gln Lys Leu Ile Thr
65   70   75   80
Val Ser Lys Asp Lys Ala Ile His Val Leu
                85   90

<210> 4759
<211> 1087
<212> DNA
<213> Homo sapiens

<400> 4759
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60
actgtcagcg tcccccagga tggctgccgg ctccggaaag gacagacgaa gacccttttc
120
gaattcagct cttctcgagc gggatttctg ccctgtggg atgtggcggc cactgacttt
180
ggccagacga accaaaagtt tgggtttgaa ctgggccccg tctgcttcag cagctgagag
240
tgtccggggt gggagggacc gtgagggagc cccagaatgg ggtgcatttg gtgctgaggc
300
tttgaagcca ccgtattttt cgttacctgt gactatggag ccaatgggat gtgacttcgc
360
tcatcacggt cagtcattcc ttctcctttc cagggtgctg ggggctgggg ttccctggcc
420
caagggtcca gcctcctctc accccattcc aggtggcata ctgcagtctg gctctttctc
480
ccctccctcc ccacccaagc ctcacctccc caccccttga acccccatgc aatgagcttc
540
taactcagag ctgatgaaca aaagcccccc caccccaat gcctgcctcc tcactcctcc
600

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gtcgctgccc ttcacacctt ttggtgctac ccctccccag agttaagcac tggatgtctc
660
ctgatcccag gctgggaccc ctaccccccac cccctttgat cctttctact tccacggtga
720
aaggactgag gtcggactac agagggaaga gggacttccc ttgactgggt tgtgtttctt
780
ttcctgcctc agcccagctc tgcaaatccc ctcccctgc ccctcacctc cccaggctca
840
ccttgccatg ccaggtggtt tggggaccaa gatgttgggg gggtgaatca ggatcctaat
900
ggtgctgccc tatttatacc tgggtctgta ttaaaaggga aagtcccccc tgttgtagat
960
ttcatctgct tcctccttag ggaaggctgg gatatgatga gagattccag cccaagcccg
1020
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1080
aactgtg
1087
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<210> 4760
<211> 78
<212> PRT
<213> Homo sapiens

<400> 4760
Xaa Ala Arg Phe Val Gly Thr Asn Gly Glu Glu Leu Ser Phe Asn Gln
 1               5                  10                  15
Thr Thr Ala Ala Thr Val Ser Val Pro Gln Asp Gly Cys Arg Leu Arg
            20                  25                  30
Lys Gly Gln Thr Lys Thr Leu Phe Glu Phe Ser Ser Ser Arg Ala Gly
        35                  40                  45
Phe Leu Pro Leu Trp Asp Val Ala Ala Thr Asp Phe Gly Gln Thr Asn
    50                  55                  60
Gln Lys Phe Gly Phe Glu Leu Gly Pro Val Cys Phe Ser Ser
65                  70                  75
```

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<210> 4761
<211> 3973
<212> DNA
<213> Homo sapiens

<400> 4761
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ggccccgggc ccgctcgccc gccgccccgc atggagctgt cagccatcgg cgagcaggtg
120
ttcgccgtgg agagcatccg gaagaagcgc gtgcggaagg gtaaagtcga gtatctggtg
180
aagtggaaag gatggccccc aaagtacagc acgtgggagc cagaagagca catcttggac
240
ccccgcctcg tcatggccta cgaggagaag gaggagagag accgagcatc ggggtatagg
300
aagagaggtc cgaaacccaa gcggcttctg ctgcagcggc tgtacagcat ggacctgcgg
360
```

agctcccaca aggccaaggg caaggagaag ctctgcttct ccctgacgtg cccactcggc
420
agcgggagcc ctgaggggt ggtcaaggcg ggggcacctg agctggtgga caagggcccc
480
ttggtgccca ccctgccctt cccgctccgc aagccccgaa aggcccacaa gtacctgcgg
540
ctctcgcgca agaagttccc gccccgcggg cccaacctgg agagccacag ccatcgacgg
600
gagctcttcc tgcaggagcc accggcccca gacgtcctgc aggcggctgg cgagtgggag
660
cctgctgcgc agccccctga agaggaggca gatgccgacc tggccgaggg gccccctccc
720
tggacacctg cgctcccctc aagtgaggtg accgtgaccg acatcaccgc caactccatc
780
accgtcacct tccgcgaggc ccaggcagct gagggcttct tccgagaccg cagtgggaag
840
ttctgaatca ccgtttttac tcttcttaaa ctgtttctt ttgggcttgg ggtgggactt
900
ccagagatag ggatgggttg ggggcggggt aattatttta tttaaaaaaa taccgagcag
960
caaaagggga gaagatccca ctactctccc accacctgcc ctttctctga gggacgttta
1020
ccacgaggcc tcaggctggg gatggagaga gttgctctgg gagttggggt accacccca
1080
gggcaggatg gggacaggat cacctgcccg ggacaccacc attatcattc tcctctagtg
1140
acgcagcagc tggttctggg agttaaagga gcattggaag gcccaaaccc tctcccttga
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gtggccaccc cagcctggtt ggctggtttt cccctttct cttgtttcaa ttgggtcttt
1260
accttgaact ctcctctctg gctttgcggt gggctgtgga ggctggtttt gaccaaaagt
1320
gagtggggcg ggaggaaggg gcaggaggaa gggttgaggt tacttggggc gagtcccttc
1380
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1440
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1560
tggctgcaga cgtgtccaca tgggccttgc gaacctgggt tagaaaccct ggccaggcga
1620
acgtggggtg attcacagca caaaagacct caccaccaca cctgcactca ccccaccttg
1680
catgcacctt gctacctgct tgcggctttc agtggagggc aggggtctgg cacaggtgcg
1740
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1800
gggtgtgcag gcgtctgcta agttgtgtga tgtatcagca caggctttga gacgtctgga
1860
ccctgtcctt cctcccgtga ggggttcttg ttctttctga ctcaggtgac ttttcagccc
1920
ttccaattcc cctctttttc tgccctcccc tccaactcag ccaacccagg tgtgggcagt
1980

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cagggaggga gggagtgtcc caccacgttc tcagggcagc ccttgactcc taagcccctt
2040
cctccttcca ttctgcatcc cctccccatc caacctaaat gccacagctg gggctgagct
2100
gtattcctgt ggagggacct ctgccgtgcc tctctgaggt caggctgtgc tgtgtgatgg
2160
gcaggctttg ccccagccca cccctggcaa ggtgcacttg ttttctggtt tgtacaaggt
2220
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2280
tgtagggag acaaaaccag attgggggc ccaaggggag catggaaaag gccggctccc
2340
ctgtctttcc ttggctgtca gagtcagggt aacacacacc aagagtggag tgcggccagc
2400
aagtttgaga cctgcccgcc ctcctcgcag ctctgctctg tgtcctcagg aagtcacaga
2460
gtctactgag gcaaggagag ggtgattctt tccccaaatc ccttcttccc tggttcccaa
2520
accaaagaca gcctgcagcc ctttctgcat ggggtgctct gttgacaggc ttcccagatc
2580
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cattggggggg acagtccct ccgggatgac ctgattcacc tccagcccag ggaatggaat
2700
ctagaggaat acgtggggtg ggtctggaca aggagcggca ggaatcacca cccatctcca
2760
gctgtggagc cctgtggagg ggaagggaa gcttggggtt cagaggggac tcttccagga
2820
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2940
cccagcggac atgggacctt tttcctgctt cctggtcact ttcaaagaac tatttgcgca
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atctgtgggt ctgtggattc acggggcttt ctgtgtgggt gctgcagttg cttttgtctg
3060
cagcagcagg acacatcttt cctcttactc aggcccttta tggcccatgg ggaactccgt
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3180
gctcagggca gccaggtggc tcatgggctg tagtgagcca gctccctggg ggaaaaggct
3240
gtgggccgtt aggaccatcc tccaggacag gtgacctcta tgaggtcacc tacggctgtg
3300
gccgtgcagg cctccttcca gcccagagtg gcccagtaga gcaaggcaga cagtgacctc
3360
caccccgca gccctcttaa aaggccagta ctcttggggg tgggggagg gtttagaaag
3420
catttgccca tctgcctttc tttcccccag cccccacccg ctttgaatgt agagacccgt
3480
gggcacttt ccttttgtgg tgggggggtgc ggaggaggta cccccacccc tggcacagcc
3540
gcctggaatg caggactgtc actgctgttc gggtgatgac ctcgttgcca agctcctcct
3600
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gtccccttgt tctgggggca ggcgctgtgc ttctgtgagg tggtttagct tttgctttcg
3660
aagtggccag ctgcggccac caggtctcag cacaagagcg cttcctttgc acagaatgag
3720
cttcgagctt tgttcagact aaatgaatgt atctgggagg ggtcgggggc acgagttgat
3780
tccaagcaca tgcctttgct gagtgtgtgt gtgctgggag agtcagagtg gatgtagagc
3840
gcggttttat ttttgtactg acattggtaa gagactgtat agcatctatt tatttagatg
3900
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3960
aagaaaaaaa aaa
3973
```

```
<210> 4762
<211> 251
<212> PRT
<213> Homo sapiens
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<400> 4762
Met Glu Leu Ser Ala Ile Gly Glu Gln Val Phe Ala Val Glu Ser Ile
1               5                   10                  15
Arg Lys Lys Arg Val Arg Lys Gly Lys Val Glu Tyr Leu Val Lys Trp
            20                  25                  30
Lys Gly Trp Pro Pro Lys Tyr Ser Thr Trp Glu Pro Glu Glu His Ile
            35                  40                  45
Leu Asp Pro Arg Leu Val Met Ala Tyr Glu Glu Lys Glu Glu Arg Asp
        50                  55                  60
Arg Ala Ser Gly Tyr Arg Lys Arg Gly Pro Lys Pro Lys Arg Leu Leu
65                  70                  75                  80
Leu Gln Arg Leu Tyr Ser Met Asp Leu Arg Ser Ser His Lys Ala Lys
                85                  90                  95
Gly Lys Glu Lys Leu Cys Phe Ser Leu Thr Cys Pro Leu Gly Ser Gly
            100                 105                 110
Ser Pro Glu Gly Val Val Lys Ala Gly Ala Pro Glu Leu Val Asp Lys
        115                 120                 125
Gly Pro Leu Val Pro Thr Leu Pro Phe Pro Leu Arg Lys Pro Arg Lys
        130                 135                 140
Ala His Lys Tyr Leu Arg Leu Ser Arg Lys Lys Phe Pro Pro Arg Gly
145                 150                 155                 160
Pro Asn Leu Glu Ser His Ser His Arg Arg Glu Leu Phe Leu Gln Glu
                165                 170                 175
Pro Pro Ala Pro Asp Val Leu Gln Ala Ala Gly Glu Trp Glu Pro Ala
            180                 185                 190
Ala Gln Pro Pro Glu Glu Glu Ala Asp Ala Asp Leu Ala Glu Gly Pro
        195                 200                 205
Pro Pro Trp Thr Pro Ala Leu Pro Ser Ser Glu Val Thr Val Thr Asp
        210                 215                 220
Ile Thr Ala Asn Ser Ile Thr Val Thr Phe Arg Glu Ala Gln Ala Ala
225                 230                 235                 240
Glu Gly Phe Phe Arg Asp Arg Ser Gly Lys Phe
                245                 250
```

<210> 4763
<211> 2158
<212> DNA
<213> Homo sapiens

<400> 4763
nnatttggtg gcaatattaa atcttctcac gaaattactg agaaatctac tgaagaaact
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gagaaactta aaaatgacca gcaggccaag ataccactaa aaaaacgaga aattaaactg
120
agtgatgatt ttgacagtcc agtcaaggga cctttgtgta aatcagttac tccaacaaaa
180
gagttttttga aagatgaaat aaaacaagag gaagagactt gtaaaaggat ctctacaatc
240
actgctttgg gtcatgaagg gaaacagctg gtaaatggag aagttagtga tgaaagggta
300
gctccaaatt ttaagacaga accaatagag acaaagtttt atgagacaaa ggaagagagc
360
tatagcccct ctaaggacag aaatatcatc acggagggaa atggaacaga gtccttaaat
420
tctgtcataa caagtatgaa aacaggtgag cttgagaaag aaacagcccc tttgaggaaa
480
gatgcagata gttcaatatc agtcttagag atccatagtc aaaaagcaca aatagaggaa
540
cccgatcctc cagaaatgga aacttctctt gattcttctg agatggcaaa agatctctct
600
tcaaaaactg ctttatcttc caccgagtcg tgtaccatga aaggtgaaga gaagtctccc
660
aaaactaaga aggataagcg cccaccaatc ctagaatgtc ttgaaaagtt agagaagtcc
720
aaaaagactt ttcttgataa ggacgcacaa agattgagtc caataccaga agaagttcca
780
aagagtactc tagagtcaga aaagcctggc tctcctgagg cagctgaaac ttctccacca
840
tctaatatca ttgaccactg tgagaaacta gcctcagaaa aagaagtggt agaatgccag
900
agtacaagta ctgttggtgg ccagtctgtg aaaaaagtag acctagaaac cctaaaagag
960
gattctgagt tcacaaaggt agaaatggat aatctggaca atgcccagac ctctggcata
1020
gaggagcctt ctgagacaaa gggttctatg caaaaaagca aattcaaata taagttggtt
1080
cctgaagaag aaaccactgc ctcagaaaat acagagataa cctctgaaag gcagaaagag
1140
ggcatcaaat taacaatcag gatatcaagt cggaaaaaga gcccgattc tcccccaaaa
1200
gttctagaac cagaaaacaa gcaagagaag acagaaaagg aagaggagaa aacaaatgtg
1260
ggtcgtactt taagaagatc tccaagaata tctagaccca ctgcaaaagt ggctgagatc
1320
agagatcaga aagctgataa aaaaagaggg gaaggagaag atgaggtgga agaagagtca
1380
acagctttgc aaaaaactga caaaaaggaa attttgaaaa aatcagagaa agatacaaat
1440

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tctaaagtaa gcaaggtaaa acccnnaaag gcaaagttcg atggactggt tctcggacac
1500
gtggcagatg gaaatattcc agcaatgatg aaagtgaagg gtctggcagt gaaaaatcat
1560
ctgcagcttc agaagaggag gaagaaaagg aaagtgaaga agccatccnt agcagatgat
1620
gatgaaccat gcaaaaaatg tggccttcca aaccatcctg agctaattct tctgtgtgac
1680
tcttgcgata gtggatacca tactgcctgc cttcgccctc ctctgatgat catcccagat
1740
ggagaatggt tctgcccacc ttgccaacat aaactgctct gtgaaaaatt agaggaacag
1800
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1860
ttggtgtatg ttggtatcag tattgaaaac atcattcctc cacaagagcc agacttttct
1920
gaagatcaag aagaaagaa aaaagattca aaaaaatcca aagcaaactt gcttgaaagg
1980
aggtcaacaa gaacaaggaa atgtataagc tacagatttg atgagtttga tgaagcaatt
2040
gatgaagcta ttgaagatga catcaaagaa gccgatggag gaggagttgg ccgaggaaaa
2100
gatatctcca ccatcacagg tcatcgtggg aaagacatct ctactatttt ggatgaaa
2158


<210> 4764
<211> 719
<212> PRT
<213> Homo sapiens

<400> 4764
Xaa Phe Gly Gly Asn Ile Lys Ser Ser His Glu Ile Thr Glu Lys Ser
1               5                  10                  15
Thr Glu Glu Thr Glu Lys Leu Lys Asn Asp Gln Gln Ala Lys Ile Pro
            20                  25                  30
Leu Lys Lys Arg Glu Ile Lys Leu Ser Asp Asp Phe Asp Ser Pro Val
        35                  40                  45
Lys Gly Pro Leu Cys Lys Ser Val Thr Pro Thr Lys Glu Phe Leu Lys
    50                  55                  60
Asp Glu Ile Lys Gln Glu Glu Thr Cys Lys Arg Ile Ser Thr Ile
65                  70                  75                  80
Thr Ala Leu Gly His Glu Gly Lys Gln Leu Val Asn Gly Glu Val Ser
                85                  90                  95
Asp Glu Arg Val Ala Pro Asn Phe Lys Thr Glu Pro Ile Glu Thr Lys
            100                 105                 110
Phe Tyr Glu Thr Lys Glu Glu Ser Tyr Ser Pro Ser Lys Asp Arg Asn
        115                 120                 125
Ile Ile Thr Glu Gly Asn Gly Thr Glu Ser Leu Asn Ser Val Ile Thr
    130                 135                 140
Ser Met Lys Thr Gly Glu Leu Glu Lys Glu Thr Ala Pro Leu Arg Lys
145                 150                 155                 160
Asp Ala Asp Ser Ser Ile Ser Val Leu Glu Ile His Ser Gln Lys Ala
                165                 170                 175
Gln Ile Glu Glu Pro Asp Pro Pro Glu Met Glu Thr Ser Leu Asp Ser
```

```
                180                   185                   190
Ser Glu Met Ala Lys Asp Leu Ser Ser Lys Thr Ala Leu Ser Ser Thr
        195                   200                   205
Glu Ser Cys Thr Met Lys Gly Glu Glu Lys Ser Pro Lys Thr Lys Lys
    210                   215                   220
Asp Lys Arg Pro Pro Ile Leu Glu Cys Leu Glu Lys Leu Glu Lys Ser
225                   230                   235                   240
Lys Lys Thr Phe Leu Asp Lys Asp Ala Gln Arg Leu Ser Pro Ile Pro
            245                   250                   255
Glu Glu Val Pro Lys Ser Thr Leu Glu Ser Glu Lys Pro Gly Ser Pro
        260                   265                   270
Glu Ala Ala Glu Thr Ser Pro Pro Ser Asn Ile Ile Asp His Cys Glu
        275                   280                   285
Lys Leu Ala Ser Glu Lys Glu Val Val Glu Cys Gln Ser Thr Ser Thr
    290                   295                   300
Val Gly Gly Gln Ser Val Lys Lys Val Asp Leu Glu Thr Leu Lys Glu
305                   310                   315                   320
Asp Ser Glu Phe Thr Lys Val Glu Met Asp Asn Leu Asp Asn Ala Gln
            325                   330                   335
Thr Ser Gly Ile Glu Glu Pro Ser Glu Thr Lys Gly Ser Met Gln Lys
            340                   345                   350
Ser Lys Phe Lys Tyr Lys Leu Val Pro Glu Glu Glu Thr Thr Ala Ser
        355                   360                   365
Glu Asn Thr Glu Ile Thr Ser Glu Arg Gln Lys Glu Gly Ile Lys Leu
    370                   375                   380
Thr Ile Arg Ile Ser Ser Arg Lys Lys Lys Pro Asp Ser Pro Pro Lys
385                   390                   395                   400
Val Leu Glu Pro Glu Asn Lys Gln Glu Lys Thr Glu Lys Glu Glu Glu
            405                   410                   415
Lys Thr Asn Val Gly Arg Thr Leu Arg Arg Ser Pro Arg Ile Ser Arg
        420                   425                   430
Pro Thr Ala Lys Val Ala Glu Ile Arg Asp Gln Lys Ala Asp Lys Lys
        435                   440                   445
Arg Gly Glu Gly Glu Asp Glu Val Glu Glu Glu Ser Thr Ala Leu Gln
    450                   455                   460
Lys Thr Asp Lys Lys Glu Ile Leu Lys Lys Ser Glu Lys Asp Thr Asn
465                   470                   475                   480
Ser Lys Val Ser Lys Val Lys Pro Xaa Lys Ala Lys Phe Asp Gly Leu
            485                   490                   495
Val Leu Gly His Val Ala Asp Gly Asn Ile Pro Ala Met Met Lys Val
            500                   505                   510
Lys Gly Leu Ala Val Lys Asn His Leu Gln Leu Gln Lys Arg Arg Lys
        515                   520                   525
Lys Arg Lys Val Lys Lys Pro Ser Xaa Ala Asp Asp Asp Glu Pro Cys
    530                   535                   540
Lys Lys Cys Gly Leu Pro Asn His Pro Glu Leu Ile Leu Leu Cys Asp
545                   550                   555                   560
Ser Cys Asp Ser Gly Tyr His Thr Ala Cys Leu Arg Pro Pro Leu Met
            565                   570                   575
Ile Ile Pro Asp Gly Glu Trp Phe Cys Pro Pro Cys Gln His Lys Leu
        580                   585                   590
Leu Cys Glu Lys Leu Glu Glu Gln Leu Gln Asp Leu Asp Val Ala Leu
    595                   600                   605
Lys Lys Lys Glu Arg Ala Glu Arg Arg Lys Glu Arg Leu Val Tyr Val
```

```
          610                  615                  620
Gly Ile Ser Ile Glu Asn Ile Ile Pro Pro Gln Glu Pro Asp Phe Ser
625                  630                  635                  640
Glu Asp Gln Glu Glu Lys Lys Lys Asp Ser Lys Lys Ser Lys Ala Asn
               645                  650                  655
Leu Leu Glu Arg Arg Ser Thr Arg Thr Arg Lys Cys Ile Ser Tyr Arg
               660                  665                  670
Phe Asp Glu Phe Asp Glu Ala Ile Asp Glu Ala Ile Glu Asp Asp Ile
               675                  680                  685
Lys Glu Ala Asp Gly Gly Gly Val Gly Arg Gly Lys Asp Ile Ser Thr
               690                  695                  700
Ile Thr Gly His Arg Gly Lys Asp Ile Ser Thr Ile Leu Asp Glu
705                  710                  715
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<210> 4765
<211> 1707
<212> DNA
<213> Homo sapiens
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<400> 4765
ctgcaggcca agtacaacag cacgagggac atgctggatg atgatggga caccaccatg
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agcctgcatt ctcaagcctc tgccacaact cggcatccag agccccggcg cacagagcac
120
agggctccct cttcaacgtg gcgaccagtg gccctgaccc tgctgacttt gtgcttggtg
180
ctgctgatag ggctggcagc cctggggctt ttgttttttc agtactacca gctctccaat
240
actggtcaag acaccatttc tcaaatggaa gaaagattag gaaatacgtc ccaagagttg
300
caatctcttc aagtccagaa tataaagctt gcaggaagtc tgcagcatgt ggctgaaaaa
360
ctctgtcgtg agctgtataa caaagctgga gcacacaggt gcagcccttg tacagaacaa
420
tggaaatggc atggagacaa ttgctaccag ttctataaag acagcaaaag ttgggaggac
480
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540
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600
ttgcgccctg acagtggcaa ggcctggctg tggatggatg gaaccccttt cacttctgaa
660
ctgttccata ttataataga tgtcaccagc ccaagaagca gagactgtgt ggccatcctt
720
aatgggatga tcttctcaaa ggactgcaaa gaattgaagc gttgtgtctg tgagagaagg
780
gcaggaatgg tgaagccaga gagcctccat gtcccccctg aaacattagg cgaaggtgac
840
tgattcgccc tctgcaacta caaatagcag agtgagccag gcggtgccaa agcaagggct
900
agttgagaca ttgggaaatg gaacataatc aggaaagact atctctctga ctagtacaaa
960
atgggttctc gtgtttcctg ttcaggatca ccagcatttc tgagcttggg tttatgcacg
1020
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tatttaacag tcacaagaag tcttatttac atgccaccaa ccaacctcag aaacccataa
1080
tgtcatctgc cttcttggct tagagataac ttttagctct ctttcttctc aatgtctaat
1140
atcacctccc tgttttcatg tcttccttac acttggtgga ataagaaact ttttgaagta
1200
gaggaaatac attgaggtaa catccttttc tctgacagtc aagtagtcca tcagaaattg
1260
gcagtcactt cccagattgt accagcaaat acacaaggaa ttctttttgt ttgtttcagt
1320
tcatactagt cccttcccaa tccatcagta aagaccccat ctgccttgtc catgccgttt
1380
cccaacaggg atgtcacttg atatgagaat ctcaaatctc aatgccttat aagcattcct
1440
tcctgtgtcc attaagactc tgataattgt ctccctcca taggaatttc tcccaggaaa
1500
gaaatatatc cccatctccg tttcatatca gaactaccgt ccccgatatt cccttcagag
1560
agattaaaga ccagaaaaaa gtgagcctct tcatctgcac ctgtaatagt ttcagttcct
1620
attttcttcc attgacccat atttatacct ttcaggtact gaagatttaa taataataaa
1680
tgtaaatact gtgaaaaaaa aaaaaaa
1707


<210> 4766
<211> 280
<212> PRT
<213> Homo sapiens

<400> 4766
Leu Gln Ala Lys Tyr Asn Ser Thr Arg Asp Met Leu Asp Asp Asp Gly
1               5                   10                  15
Asp Thr Thr Met Ser Leu His Ser Gln Ala Ser Ala Thr Thr Arg His
                20                  25                  30
Pro Glu Pro Arg Arg Thr Glu His Arg Ala Pro Ser Ser Thr Trp Arg
            35                  40                  45
Pro Val Ala Leu Thr Leu Leu Thr Leu Cys Leu Val Leu Leu Ile Gly
        50                  55                  60
Leu Ala Ala Leu Gly Leu Leu Phe Phe Gln Tyr Tyr Gln Leu Ser Asn
65                  70                  75                  80
Thr Gly Gln Asp Thr Ile Ser Gln Met Glu Glu Arg Leu Gly Asn Thr
                85                  90                  95
Ser Gln Glu Leu Gln Ser Leu Gln Val Gln Asn Ile Lys Leu Ala Gly
            100                 105                 110
Ser Leu Gln His Val Ala Glu Lys Leu Cys Arg Glu Leu Tyr Asn Lys
        115                 120                 125
Ala Gly Ala His Arg Cys Ser Pro Cys Thr Glu Gln Trp Lys Trp His
    130                 135                 140
Gly Asp Asn Cys Tyr Gln Phe Tyr Lys Asp Ser Lys Ser Trp Glu Asp
145                 150                 155                 160
Cys Lys Tyr Phe Cys Leu Ser Glu Asn Ser Thr Met Leu Lys Ile Asn
                165                 170                 175
Lys Gln Glu Asp Leu Glu Phe Ala Ala Ser Gln Ser Tyr Ser Glu Phe
```

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            180                    185                    190
Phe Tyr Ser Tyr Trp Thr Gly Leu Leu Arg Pro Asp Ser Gly Lys Ala
        195                    200                    205
Trp Leu Trp Met Asp Gly Thr Pro Phe Thr Ser Glu Leu Phe His Ile
    210                    215                    220
Ile Ile Asp Val Thr Ser Pro Arg Ser Arg Asp Cys Val Ala Ile Leu
225                    230                    235                    240
Asn Gly Met Ile Phe Ser Lys Asp Cys Lys Glu Leu Lys Arg Cys Val
            245                    250                    255
Cys Glu Arg Arg Ala Gly Met Val Lys Pro Glu Ser Leu His Val Pro
        260                    265                    270
Pro Glu Thr Leu Gly Glu Gly Asp
        275                    280
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<210> 4767
<211> 1380
<212> DNA
<213> Homo sapiens


<400> 4767
nngaggaggg gcgcggtagc gccgccagag aggggggtgg gcaatggccg ggccccggaa
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gtggcccctg aggaggtaga tgaatccaag aaggaggact tctcggaggc ggacttggtg
120
gacgtgagcg cctacagtgg gctcggggag gactctgcgg gcagtgccct ggaggaggac
180
gacgaagacg acgaggggga tggggagccc ccctacgagc ccgagtcggg gtgcgtggag
240
atcccggggc tgtcggagga ggaggaccca gccccgagcc ggaagatcca tttcagcacg
300
gcgcccatcc aagtgttcag cacttactcc aacgaggatt acgatcgtcg caacgaggat
360
gtggatccca tggcagcctc tgctgagtac gagctggaga gcgtgtgga gaggttggag
420
ctgttccctg tggagctgga gaaggactcc gagggcctgg gcatcagcat catcggcatg
480
ggcgccgggg cagacatggg cctggagaag ctgggtatct tcgtcaagac cgtgacggag
540
ggtggtgcgg cccatcggga tggcaggatc caggtgaatg atctcctggt ggaggtggat
600
ggaacaagtc tggtgggagt gacccagagc ttcgcggcgt ctgtgctccg gaacaccaag
660
ggccgagtgc ggtttatgat tggccgggag cggccgggag agcagagcga agtggcccag
720
ctaattcagc agactttgga acaggagcga tggcagcggg agatgatgga gcagagatac
780
gcccagtatg gggaggatga cgaggagacg ggagagtatg ccactgacga ggatgaggag
840
ctgagcccca cgttcccggg tggtgagatg gccatcgagg tgtttgagct agcggagaac
900
gaggatgcac tgtcccctgt ggacatggag cccgagaagc tggtgcacaa gttcaaggag
960
ctccagatca agcatgcggt cactgaggca gagatccagc agctgaaaag aaagctgcag
1020
```

agcctggagc aggagaaggg gcgctggcgg gtggagaagg cgcagttgga gcagagtgtg
1080
gaggagaaca aggagcgcat ggagaaactg gaaggctact ggggtgaggc ccagagcctg
1140
tgccaggctg tggacgagca cctgcgggag actcaggcgc agtaccaggc cctggagcgc
1200
aagtacagca aggccaagcg cctcatcaag gactaccagc agaaggagat cgagttcctg
1260
aaaaaggaga ctgcacagcg tcgggttctg gaggagtcgg agctggccag aaaggaggag
1320
atggacaagc tcctggacaa gatctcagaa ctggaaggaa acttgcaaac actgaggaat
1380

<210> 4768
<211> 460
<212> PRT
<213> Homo sapiens

<400> 4768
Xaa Arg Arg Gly Ala Val Ala Pro Pro Glu Arg Gly Val Gly Asn Gly
1   5   10   15
Arg Ala Pro Glu Val Ala Pro Glu Glu Val Asp Glu Ser Lys Lys Glu
            20   25   30
Asp Phe Ser Glu Ala Asp Leu Val Asp Val Ser Ala Tyr Ser Gly Leu
        35   40   45
Gly Glu Asp Ser Ala Gly Ser Ala Leu Glu Glu Asp Asp Glu Asp Asp
    50   55   60
Glu Gly Asp Gly Glu Pro Pro Tyr Glu Pro Glu Ser Gly Cys Val Glu
65   70   75   80
Ile Pro Gly Leu Ser Glu Glu Glu Asp Pro Ala Pro Ser Arg Lys Ile
                85   90   95
His Phe Ser Thr Ala Pro Ile Gln Val Phe Ser Thr Tyr Ser Asn Glu
            100   105   110
Asp Tyr Asp Arg Arg Asn Glu Asp Val Asp Pro Met Ala Ala Ser Ala
        115   120   125
Glu Tyr Glu Leu Glu Lys Arg Val Glu Arg Leu Glu Leu Phe Pro Val
    130   135   140
Glu Leu Glu Lys Asp Ser Glu Gly Leu Gly Ile Ser Ile Ile Gly Met
145   150   155   160
Gly Ala Gly Ala Asp Met Gly Leu Glu Lys Leu Gly Ile Phe Val Lys
                165   170   175
Thr Val Thr Glu Gly Gly Ala Ala His Arg Asp Gly Arg Ile Gln Val
                180   185   190
Asn Asp Leu Leu Val Glu Val Asp Gly Thr Ser Leu Val Gly Val Thr
            195   200   205
Gln Ser Phe Ala Ala Ser Val Leu Arg Asn Thr Lys Gly Arg Val Arg
    210   215   220
Phe Met Ile Gly Arg Glu Arg Pro Gly Glu Gln Ser Glu Val Ala Gln
225   230   235   240
Leu Ile Gln Gln Thr Leu Glu Gln Glu Arg Trp Gln Arg Glu Met Met
                245   250   255
Glu Gln Arg Tyr Ala Gln Tyr Gly Glu Asp Asp Glu Glu Thr Gly Glu
            260   265   270
Tyr Ala Thr Asp Glu Asp Glu Glu Leu Ser Pro Thr Phe Pro Gly Gly

3947

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            275                    280                    285
Glu Met Ala Ile Glu Val Phe Glu Leu Ala Glu Asn Glu Asp Ala Leu
    290                    295                    300
Ser Pro Val Asp Met Glu Pro Glu Lys Leu Val His Lys Phe Lys Glu
305                    310                    315                    320
Leu Gln Ile Lys His Ala Val Thr Glu Ala Glu Ile Gln Gln Leu Lys
                325                    330                    335
Arg Lys Leu Gln Ser Leu Glu Gln Glu Lys Gly Arg Trp Arg Val Glu
                340                    345                    350
Lys Ala Gln Leu Glu Gln Ser Val Glu Glu Asn Lys Glu Arg Met Glu
                355                    360                    365
Lys Leu Glu Gly Tyr Trp Gly Glu Ala Gln Ser Leu Cys Gln Ala Val
    370                    375                    380
Asp Glu His Leu Arg Glu Thr Gln Ala Gln Tyr Gln Ala Leu Glu Arg
385                    390                    395                    400
Lys Tyr Ser Lys Ala Lys Arg Leu Ile Lys Asp Tyr Gln Gln Lys Glu
                405                    410                    415
Ile Glu Phe Leu Lys Lys Glu Thr Ala Gln Arg Arg Val Leu Glu Glu
                420                    425                    430
Ser Glu Leu Ala Arg Lys Glu Glu Met Asp Lys Leu Leu Asp Lys Ile
                435                    440                    445
Ser Glu Leu Glu Gly Asn Leu Gln Thr Leu Arg Asn
    450                    455                    460
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```
<210> 4769
<211> 1533
<212> DNA
<213> Homo sapiens

<400> 4769
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ggtcacacga ggggcatttt ccttgttgta agtgtagtct aaaccagtag gaaggaggtt    180
taattgccaa aaccagcgag aactcgggca ctgtggatac tacagtgggc agctgaacga    240
ggaccaagga gaatgtctaa gaggcctcca gccctgcgct cagtgaagac aggacaggaa    300
caacagagca tacataccтт ggaagggtgt gttctgatat actcgtatgg aaagttctga    360
caggttttct ccctgggaag tgcagcacat accccaacac actggctctg ccagtgtgcc    420
aatcccagat ggtgcttgct ttgtgtgcac ccacacccaa accctgccc tcccatatgc    480
tcttctgtgt gcccaggtag gccctgccct caggcagcag cttctgaaca cattcctctt    540
ggcgcagaca aaagaaagta cttcgtctgt ggaattcgag gctgagcctg agttctagca    600
caagaagacc gttgcagtcc agagatgaga aactggacca gaggcaaatc atgaacagaa    660
cgggagtcaa gagaaggggt ttctaagatg gagaagtggg ggcgggtgtg gatccagtgg    720
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gatgtggctt ccccaggttg caaccccaag gaagtctctg gaagcagcac cagtcctgat
780
gggggagcag aagagctgcc atcctcagtc agggtccgag tcagggtccg aggagagctg
840
ctgctccata gtctcgcaca tggcatcctg cagggacgta agatgacccc ggggactcat
900
ccccattggc tggatgactc tgttcctgtt ggggaaaggt gcagtggggc tggagagctt
960
gtcaaacatg gtcaccagct tcatggcctc gtgctccttc tgctcctctg tcatgccctc
1020
catagggtta ggcggcttct cctccaccct cccggtcaca gggtttatgc tggctttggc
1080
ttccttgtac tcatctgtgt ctgtgtcctc atcctctgag tactggccct cgggccggcc
1140
tcctgccatg aggcccctgg cagccagaag gccagcagca ttcccatagc ctgtgtactt
1200
gatgaatcgg ggcacactct cagagcacag gacaaacaag aactcggcag ccaccctctt
1260
cacatctgtg tccaggtgtg tcatgaggcg gacaagcttg tttcggagca ggtcccccac
1320
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1500
atccatatta actcccataa actctaagga tcc
1533

<210> 4770
<211> 237
<212> PRT
<213> Homo sapiens

<400> 4770
Met Gly Val Asn Met Asp Val Ile Asn Ala Leu Leu Ala Phe Leu Glu
1   5   10   15
Lys Arg Leu His Gln Thr His Arg Leu Lys Glu Cys Val Ala Pro Val
                20   25   30
Leu Ser Val Leu Thr Glu Cys Ala Arg Met His Arg Pro Ala Arg Lys
            35   40   45
Phe Leu Lys Ala Gln Val Leu Pro Pro Leu Arg Asp Val Arg Thr Arg
        50   55   60
Pro Glu Val Gly Asp Leu Leu Arg Asn Lys Leu Val Arg Leu Met Thr
65   70   75   80
His Leu Asp Thr Asp Val Lys Arg Val Ala Ala Glu Phe Leu Phe Val
                85   90   95
Leu Cys Ser Glu Ser Val Pro Arg Phe Ile Lys Tyr Thr Gly Tyr Gly
            100   105   110
Asn Ala Ala Gly Leu Leu Ala Ala Arg Gly Leu Met Ala Gly Gly Arg
        115   120   125
Pro Glu Gly Gln Tyr Ser Glu Asp Glu Asp Thr Asp Thr Asp Glu Tyr
        130   135   140
Lys Glu Ala Lys Ala Ser Ile Asn Pro Val Thr Gly Arg Val Glu Glu

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145                      150                     155                     160
Lys Pro Pro Asn Pro Met Glu Gly Met Thr Glu Glu Gln Lys Glu His
                    165                     170                     175
Glu Ala Met Lys Leu Val Thr Met Phe Asp Lys Leu Ser Ser Pro Thr
                180                     185                     190
Ala Pro Phe Pro Asn Arg Asn Arg Val Ile Gln Pro Met Gly Met Ser
            195                     200                     205
Pro Arg Gly His Leu Thr Ser Leu Gln Asp Ala Met Cys Glu Thr Met
        210                     215                     220
Glu Gln Gln Leu Ser Ser Asp Pro Asp Ser Asp Pro Asp
225                     230                     235
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<210> 4771
<211> 2653
<212> DNA
<213> Homo sapiens

<400> 4771

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120
tgggcaccac aggtaaggca ctgcctgggg gctggaggag gctggaggag gatgcccaag
180
ctccccacac tcctcacccc agaccgggga agctggatat cctccgtgtt gtcctctccc
240
catagctggt ctgaggctgt ggtttacacg caggcacagg taggcgattc tgagcatcaa
300
cgcagatgga ggggagggtg agccgtcgtg ggagaactgg cccaagacca gcacctggct
360
ggtgtcgcca gccccggctg cattggtggg tgaggcaggt ctggctggag tctgggtctg
420
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480
gaggcagcag gcacctagtg gtgccactgg acacccggc tccaggactc cggatgtcac
540
acatgcgtga gtcttggcgt ctacacccc ctcggggcca gtgggtgagc agtggcccgt
600
ggtccccgcc agagctcccc cagagtggac ttggctccgc cggacacagt gccctgctct
660
gagctgccgc tggctgctcc acgtctgaga ccacgcgacg ttgcctcatg aactgacgtg
720
gacagcagca ggggagacgc tgggtggttc tgtggccaag cacagcccgt gtcaggagca
780
caggccgtgc cctttcccag ggggcacact gggcatttct caatggcctt cacaggacgc
840
aaaggggcac acagaggcag tggggaagct ggagttcttg ggctggcagg gaatggtggc
900
agccttcttg gccttcatga agggcctggc ttgctgggct aaggtcacag tgttctgagg
960
tccccacacg cactcagact agaccctccg tacacaccca ggctagaccc tccatactca
1020
cccaggctag accctccata cacacccagg ctagaccctc catactcacc caggctagac
1080
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cctccataca cacccaggct agaccctcca tactcaccca ggctagaccc tccatactca
1140
cccaggctag atcctccata cacacccagg ctagactctc cgtactcacc caggctagat
1200
cctccgtact cacccaggct agaccctccg tactcaccca ggctagaccc tccgtacaca
1260
cccaggctag accctccgta cacacccaga ctagaggctt ggggctgaga aaagcagtca
1320
tgcctcctca ggaattacca gcagagaatg cccagccctc ttgatagtag caataattaa
1380
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1440
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1500
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1560
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1620
tataaattag actctgctgt ggcaataaat aagaagctgg aaaaggaaaa agaaaagtta
1680
aagcaagaaa gactagagaa aataaaacag cgtgataaga ggctggagtg ggaaatgatg
1740
tgcagagtaa agccagatgt tgtccaagac aaagagacag agagaaatct tcagagaatt
1800
gcaacaaggg gtgtggtgca attatttaat gctgttcaga aacatcaaaa gaatgttgat
1860
gaaaaggtta aggaagctgg aagttctatg agaaagcgtg ctaagttgat atcaactgtt
1920
tccaagaaag atttcatcag tgttttgaga gggatggatg gaagtacaaa tgagactgct
1980
tcaagcagga agaaaccaaa agccaaacag actgaagtga atcagaaga aggcccaggt
2040
tggacgatcc tacgtgatga tttcatgatg ggagcatcta tgaaagactg ggacaaggaa
2100
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2160
ataggaaata caattgcagt cgttttattt tttctagaaa aatatgtcat cctctgatag
2220
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2280
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2340
ataattttaa gcattgttcc tcagaacatt tgtaaaagga tatatttctg cttgaccagc
2400
gagatgtgca ttttgccagg atcatattgg tcatgtctat tggtgtatta tttcagtatc
2460
accaatgttt tcagaaatac agtactaatt catcattaaa ctctttgaag ttaatatttt
2520
tctgccttct aacttataga ctcaactatg tatctgtagt ttttgggaat ggttggtgtt
2580
ttttgctttg tgttgggaag ttattgagaa aacctatata ataaaattta aaattatagt
2640
ttttcaaaaa aaa
2653
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<210> 4772
<211> 182
<212> PRT
<213> Homo sapiens

<400> 4772
Gly Val Ser Val Ala Tyr Lys Leu Asp Ser Ala Val Ala Ile Asn Lys
1               5                   10                  15
Lys Leu Glu Lys Glu Lys Glu Lys Leu Lys Gln Glu Arg Leu Glu Lys
            20                  25                  30
Ile Lys Gln Arg Asp Lys Arg Leu Glu Trp Glu Met Met Cys Arg Val
            35                  40                  45
Lys Pro Asp Val Val Gln Asp Lys Glu Thr Glu Arg Asn Leu Gln Arg
        50                  55                  60
Ile Ala Thr Arg Gly Val Val Gln Leu Phe Asn Ala Val Gln Lys His
65                  70                  75                  80
Gln Lys Asn Val Asp Glu Lys Val Lys Glu Ala Gly Ser Ser Met Arg
                85                  90                  95
Lys Arg Ala Lys Leu Ile Ser Thr Val Ser Lys Lys Asp Phe Ile Ser
            100                 105                 110
Val Leu Arg Gly Met Asp Gly Ser Thr Asn Glu Thr Ala Ser Ser Arg
            115                 120                 125
Lys Lys Pro Lys Ala Lys Gln Thr Glu Val Lys Ser Glu Glu Gly Pro
        130                 135                 140
Gly Trp Thr Ile Leu Arg Asp Asp Phe Met Met Gly Ala Ser Met Lys
145                 150                 155                 160
Asp Trp Asp Lys Glu Ser Asp Gly Pro Asp Asp Ser Arg Pro Glu Ser
                165                 170                 175
Ala Ser Asp Ser Asp Thr
                180

<210> 4773
<211> 319
<212> DNA
<213> Homo sapiens

<400> 4773
gctagcagga ggggaggtaa attaagtaaa tggagatggc ctgggatgca ggccagctgg
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gaggagtctc cagtgggagg ggcagctcag agagcaacag agggagataa gattcctaaa
120
tgctgcaggc cccagcccag gcccaaccca agcagtctct tcccacccag cccccaggcc
180
cgggcggcaa tggggtggcg agtacttgcc tggacccagc atcccatctc ctcagctctc
240
agcctggacc cagcatccca tctcctcagc tctcagggag gtggaagctg ggaaccccac
300
ccccaacccc ttcacgcgt
319

<210> 4774
<211> 91
<212> PRT
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<213> Homo sapiens

<400> 4774
Met Gln Ala Ser Trp Glu Glu Ser Pro Val Gly Gly Ala Ala Gln Arg
1   5   10   15
Ala Thr Glu Gly Asp Lys Ile Pro Lys Cys Cys Arg Pro Gln Pro Arg
            20   25   30
Pro Asn Pro Ser Ser Leu Phe Pro Pro Ser Pro Gln Ala Arg Ala Ala
            35   40   45
Met Gly Trp Arg Val Leu Ala Trp Thr Gln His Pro Ile Ser Ser Ala
        50   55   60
Leu Ser Leu Asp Pro Ala Ser His Leu Leu Ser Ser Gln Gly Gly Gly
65   70   75   80
Ser Trp Glu Pro His Pro Gln Pro Leu His Ala
                85   90

<210> 4775
<211> 433
<212> DNA
<213> Homo sapiens

<400> 4775
ggatcccaca ggagatacct gacaaggact aagaggaggc ttcccagagg gcataacacc
60
tatgctggat cttttggagg aaaaaataat tgtcaggaga aaaggagtga aaaagacctt
120
tgggcttaaa catgaaccaa catggcggat gcttcaagca agtggggttg ctgggcccta
180
aaggtggaga ggggtgaaat gaaaagactc gcctcttctt cccccactaa ctccctcctc
240
tggctgcact gccctccttg ctatttcttt gaacgtgcca accataccgc gacctcactg
300
cccttgcact tgctctctct gcttctccta actatacatg cggctcatcc tgtaacttcc
360
tttcagtttt tgctcacctt cttgaaaagg ccttctctga ccattctgtt taatattcca
420
ccccgcttaa acg
433

<210> 4776
<211> 97
<212> PRT
<213> Homo sapiens

<400> 4776
Met Ala Asp Ala Ser Ser Lys Trp Gly Cys Trp Ala Leu Lys Val Glu
1   5   10   15
Arg Gly Glu Met Lys Arg Leu Ala Ser Ser Ser Pro Thr Asn Ser Leu
            20   25   30
Leu Trp Leu His Cys Pro Pro Cys Tyr Phe Phe Glu Arg Ala Asn His
            35   40   45
Thr Ala Thr Ser Leu Pro Leu His Leu Leu Ser Leu Leu Leu Leu Thr
        50   55   60
Ile His Ala Ala His Pro Val Thr Ser Phe Gln Phe Leu Leu Thr Phe

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65                      70                  75                  80
Leu Lys Arg Pro Ser Leu Thr Ile Leu Phe Asn Ile Pro Pro Arg Leu
                        85                  90                  95
Asn


<210> 4777
<211> 2200
<212> DNA
<213> Homo sapiens

<400> 4777
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cgagtccggg gtctggcagc cgagaaccag gagctgcggg ccgagaatcg ggagctgggc
120
aaacgcgtac aggcactgca ggaggagagt cgctacctac gggcagtctt agccaacgag
180
actggactgg ctcgcttgct gagccggctg agcggcgtgg gactgcggct gaccacctcg
240
ctcttcagag actcgcccgc cggtgaccac gactacgctc tgccggtggg aaagcagaag
300
caggacctgc tggaagagga cgactcggcg ggaggagtct gtctccatgt ggacaaggat
360
aaggtgtcgg tggagttctg ctcggcgtgc gcccggaagg cgtcgtcttc tcttaaaatt
420
ttcttttta ggtgatttcc ttcctgccag gctccgttgt aggggttaca gaacagtcgt
480
tcccgcctca caacctgtgg atacagctgt tggggcagaa gagacgggac cagctgctgg
540
ccacatttcc tgctttattt taaaaggtag tataagaaat gaggaaaaag aggtaatatc
600
agggcttctg ctgttttta tttttaacat gttcataatt aaaaagtatt ttccagcagt
660
ccaaagatgt aagttatctt acacataaaa tgttttattt tgttatttgg ttatgaaaat
720
ggaatccttg ttcttgcaca actgtaaatg ttttgttgct agataatacg atttgagacc
780
tgaattggtc tttggtttcc agtgcatcac agcatatttt gtaaatcat ctactactgc
840
acttgagcat gaatgggtag tagccaaact cacaaattgg agtgatgaac ctgcttatac
900
ctaagggcag gagcaagccc ctcacaatgc agctgcatgg gtttttagtg cctactgaat
960
tatatatata tatacatata tatatatata tataaccaa aagtagttgg aaagattatt
1020
tgaaatgact aatttgtgct atctttatga aatatgttaa atgtagcttt tttgaaacag
1080
aagccttgaa ttgaaattta actaatactt gaacattttg tatatatttc tttgtatata
1140
attttgtgca gtaccaatga caaaaatatg gtgtcataat aaaaccaggt ttgttgatct
1200
tttagttatg ggctcaaaga atttattcat ctctaacatg atattggaaa ataatggatg
1260
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aaaataggaa aaatgattgt taatgctgac tgtgggtctt aaaaggttct ggaaagcagt
1320
aagttcattt ttctaaaaac tataacattc tgttggagta ttttcttcct tacgtcaata
1380
ctttтcctgc attatttgaa attgtgggct ggggagaaac agtagtcaaa gctttctgaa
1440
ttgagatact ttgaaattcc aagtgtagat ttttagaatg tcattttata aatggcagtt
1500
tttggaatta cttgataaga acttttgaaa atggaaggat tagtatggcc tatttttaaa
1560
gctgcttgt taggttcctt atgttttatt aactgtcttt tctcagtttc catttcattt
1620
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1680
tgtttttaca tggtaattgc atgtacttag gatctatcta ataggggctt taaataaatt
1740
tggtcatatt tatgtgtaag cacattttac tgtaaatgtt tgggtttctg aatttaaaca
1800
gatctgttta tttcagtatg tagtaaacaa tatcttaaag tgtccgattc actacttgtt
1860  ··
aattaaaaaa gttatgatta atgtgaaact gttgtcttac tatttttaga aaattgtgtt
1920
ctggatgatt agcacatgga taaaggagat ttctggaata taaaatggat tgtttttgaa
1980
atttctaggt ttggctctat ttactgtaat ggttgaaaac aatttagtat ttgggtgacc
2040
cttttgtttt tcttctaaat gtgcctctgg taaaatacag aactagacta aagatgtagc
2100
tttttaatat ttgtcttttg atggtggcag gagttcatac attaattgaa ctaacacatc
2160
atattttgac ctactatttc tatcatattg acttactgtt
2200


<210> 4778
<211> 144
<212> PRT
<213> Homo sapiens

<400> 4778
Ala Ala Ala Ala Arg Leu Asn Arg Leu Lys Lys Lys Glu Tyr Val Met
1               5                   10                  15
Gly Leu Glu Ser Arg Val Arg Gly Leu Ala Ala Glu Asn Gln Glu Leu
            20                  25                  30
Arg Ala Glu Asn Arg Glu Leu Gly Lys Arg Val Gln Ala Leu Gln Glu
        35                  40                  45
Glu Ser Arg Tyr Leu Arg Ala Val Leu Ala Asn Glu Thr Gly Leu Ala
    50                  55                  60
Arg Leu Leu Ser Arg Leu Ser Gly Val Gly Leu Arg Leu Thr Thr Ser
65                  70                  75                  80
Leu Phe Arg Asp Ser Pro Ala Gly Asp His Asp Tyr Ala Leu Pro Val
                85                  90                  95
Gly Lys Gln Lys Gln Asp Leu Leu Glu Glu Asp Asp Ser Ala Gly Gly
            100                 105                 110
Val Cys Leu His Val Asp Lys Asp Lys Val Ser Val Glu Phe Cys Ser
```

```
                 115                  120                  125
    Ala Cys Ala Arg Lys Ala Ser Ser Ser Leu Lys Ile Phe Phe Phe Arg
         130                  135                  140
```

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<210> 4779
<211> 4467
<212> DNA
<213> Homo sapiens
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<400> 4779
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120
gaggatttgg ggtggaaggc aggcatggtc aaacccattt cactgacagg agagcagaga
180
caggacgtgt ctctctccac gtcttccagc cagtaaaaga agccaagctg gagcccaaag
240
ccaggtgttc tgactcccag cgtgggggtc cctgcaccaa ccatgagccg cctgctctgg
300
aggaaggtgg ccggcgccac cgtcgggcca gggccggttc cagctccggg gcgctgggtc
360
tccagctccg tccccgcgtc cgaccccagc gacgggcagc ggcggcggca gcagcagcag
420
cagcagcagc agcagcagca gcagcaacag cagcctcagc agccgcaagt gctatcctcg
480
gagggcgggc agctgcggca caacccattg gacatccaga tgctctcgag agggctgcac
540
gagcaaatct tcgggcaagg aggggagatg cctggcgagg ccgcggtgcg ccgcagcgtc
600
gagcacctgc agaagcacgg gctctggggg cagccagccg tgcccttgcc cgacgtggag
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720
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960
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1020
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1080
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1140
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1200
agcagcttcc agcgcagtct gtggatagca gccaagcagg gcaaacacaa ggtccagccc
1260
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1320
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1440
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1620
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1800
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1920
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1980
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2100
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2160
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2220
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2280
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2340
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2460
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2520
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2820
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2880
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2940
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3060
aagagcaggg gcactgatct acacagtaag acagccacta ctgtgggcat cagccgtgag
3120
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3180
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3240
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3300
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3360
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gctgaacggg catggaaggg gggcacagag tcagaaatgt tcaataagct tgagagcatt
3480
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3540
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4200
tgccaacatc ggtgtggact acaggacaag gggcattgtt gcttgttggg taaaaatgaa
4260
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4320
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4467
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<210> 4780

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<211> 1241
<212> PRT
<213> Homo sapiens

<400> 4780
Met Ser Arg Leu Leu Trp Arg Lys Val Ala Gly Ala Thr Val Gly Pro
 1               5                  10                  15
Gly Pro Val Pro Ala Pro Gly Arg Trp Val Ser Ser Ser Val Pro Ala
            20                  25                  30
Ser Asp Pro Ser Asp Gly Gln Arg Arg Arg Gln Gln Gln Gln Gln Gln
            35                  40                  45
Gln Gln Gln Gln Gln Gln Gln Gln Gln Pro Gln Gln Pro Gln Val Leu
        50                  55                  60
Ser Ser Glu Gly Gly Gln Leu Arg His Asn Pro Leu Asp Ile Gln Met
65                  70                  75                  80
Leu Ser Arg Gly Leu His Glu Gln Ile Phe Gly Gln Gly Gly Glu Met
            85                  90                  95
Pro Gly Glu Ala Ala Val Arg Arg Ser Val Glu His Leu Gln Lys His
            100                 105                 110
Gly Leu Trp Gly Gln Pro Ala Val Pro Leu Pro Asp Val Glu Leu Arg
            115                 120                 125
Leu Pro Pro Leu Tyr Gly Asp Asn Leu Asp Gln His Phe Arg Leu Leu
    130                 135                 140
Ala Gln Lys Gln Ser Leu Pro Tyr Leu Glu Ala Ala Asn Leu Leu Leu
145                 150                 155                 160
Gln Ala Gln Leu Pro Pro Lys Pro Pro Ala Trp Ala Trp Ala Glu Gly
            165                 170                 175
Trp Thr Arg Tyr Gly Pro Glu Gly Glu Ala Val Pro Val Ala Ile Pro
            180                 185                 190
Glu Glu Arg Ala Leu Val Phe Asp Val Glu Val Cys Leu Ala Glu Gly
            195                 200                 205
Thr Cys Pro Thr Leu Ala Val Ala Ile Ser Pro Ser Ala Trp Tyr Ser
    210                 215                 220
Trp Cys Ser Gln Arg Leu Val Glu Glu Arg Tyr Ser Trp Thr Ser Gln
225                 230                 235                 240
Leu Ser Pro Ala Asp Leu Ile Pro Leu Glu Val Pro Thr Gly Ala Ser
            245                 250                 255
Ser Pro Thr Gln Arg Asp Trp Gln Glu Gln Leu Val Val Gly His Asn
            260                 265                 270
Val Ser Phe Asp Arg Ala His Ile Arg Glu Gln Tyr Leu Ile Gln Gly
            275                 280                 285
Ser Arg Met Arg Phe Leu Asp Thr Met Ser Met His Met Ala Ile Ser
    290                 295                 300
Gly Leu Ser Ser Phe Gln Arg Ser Leu Trp Ile Ala Ala Lys Gln Gly
305                 310                 315                 320
Lys His Lys Val Gln Pro Pro Thr Lys Gln Gly Gln Lys Ser Gln Arg
            325                 330                 335
Lys Ala Arg Arg Gly Pro Ala Ile Ser Ser Trp Asp Trp Leu Asp Ile
            340                 345                 350
Ser Ser Val Asn Ser Leu Ala Glu Val His Arg Leu Tyr Val Gly Gly
            355                 360                 365
Pro Pro Leu Glu Lys Glu Pro Arg Glu Leu Phe Val Lys Gly Thr Met
    370                 375                 380
Lys Asp Ile Arg Glu Asn Phe Gln Asp Leu Met Gln Tyr Cys Ala Gln
```

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385                    390                    395                    400
Asp Val Trp Ala Thr His Glu Val Phe Gln Gln Gln Leu Pro Leu Phe
                405                    410                    415
Leu Glu Arg Cys Pro His Pro Val Thr Leu Ala Gly Met Leu Glu Met
            420                    425                    430
Gly Val Ser Tyr Leu Pro Val Asn Gln Asn Trp Glu Arg Tyr Leu Ala
            435                    440                    445
Glu Ala Gln Gly Thr Tyr Glu Glu Leu Gln Arg Glu Met Lys Lys Ser
        450                    455                    460
Leu Met Asp Leu Ala Asn Asp Ala Cys Gln Leu Leu Ser Gly Glu Arg
465                    470                    475                    480
Tyr Lys Glu Asp Pro Trp Leu Trp Asp Leu Glu Trp Asp Leu Gln Glu
                485                    490                    495
Phe Lys Gln Lys Lys Ala Lys Lys Val Lys Lys Glu Pro Ala Thr Ala
            500                    505                    510
Ser Lys Leu Pro Ile Glu Gly Ala Gly Ala Pro Gly Asp Pro Met Asp
            515                    520                    525
Gln Glu Asp Leu Gly Pro Cys Ser Glu Glu Glu Glu Phe Gln Gln Asp
        530                    535                    540
Val Met Ala Arg Ala Cys Leu Gln Lys Leu Lys Gly Thr Thr Glu Leu
545                    550                    555                    560
Leu Pro Lys Arg Pro Gln His Leu Pro Gly His Pro Gly Trp Tyr Arg
                565                    570                    575
Lys Leu Cys Pro Arg Leu Asp Asp Pro Ala Trp Thr Pro Gly_Pro Ser
            580                    585                    590
Leu Leu Ser Leu Gln Met Arg Val Thr Pro Lys Leu Met Ala Leu Thr
            595                    600                    605
Trp Asp Gly Phe Pro Leu His Tyr Ser Glu Arg His Gly Trp Gly Tyr
        610                    615                    620
Leu Val Pro Gly Arg Arg Asp Asn Leu Ala Lys Leu Pro Thr Gly Thr
625                    630                    635                    640
Thr Leu Glu Ser Ala Gly Val Val Cys Pro Tyr Arg Ala Ile Glu Ser
                645                    650                    655
Leu Tyr Arg Lys His Cys Leu Glu Gln Gly Lys Gln Gln Leu Met Pro
            660                    665                    670
Gln Glu Ala Gly Leu Ala Glu Glu Phe Leu Leu Thr Asp Asn Ser Ala
        675                    680                    685
Ile Trp Gln Thr Val Glu Glu Leu Asp Tyr Leu Glu Val Glu Ala Glu
    690                    695                    700
Ala Lys Met Glu Asn Leu Arg Ala Ala Val Pro Gly Gln Pro Leu Ala
705                    710                    715                    720
Leu Thr Ala Arg Gly Gly Pro Lys Asp Thr Gln Pro Ser Tyr His His
            725                    730                    735
Gly Asn Gly Pro Tyr Asn Asp Val Asp Ile Pro Gly Cys Trp Phe Phe
            740                    745                    750
Lys Leu Pro His Lys Asp Gly Asn Ser Cys Asn Val Gly Ser Pro Phe
            755                    760                    765
Ala Lys Asp Phe Leu Pro Lys Met Glu Asp Gly Thr Leu Gln Ala Gly
    770                    775                    780
Pro Gly Gly Ala Ser Gly Pro Arg Ala Leu Glu Ile Asn Lys Met Ile
785                    790                    795                    800
Ser Phe Trp Arg Asn Ala His Lys Arg Ile Ser Ser Gln Met Val Val
            805                    810                    815
Trp Leu Pro Arg Ser Ala Leu Pro Arg Ala Val Ile Arg His Pro Asp
```

3960

```
                820                    825                    830
Tyr Asp Glu Glu Gly Leu Tyr Gly Ala Ile Leu Pro Gln Val Val Thr
        835                    840                    845
Ala Gly Thr Ile Thr Arg Arg Ala Val Glu Pro Thr Trp Leu Thr Ala
    850                    855                    860
Ser Asn Ala Arg Pro Asp Arg Val Gly Ser Glu Leu Lys Ala Met Val
865                    870                    875                    880
Gln Ala Pro Pro Gly Tyr Thr Leu Val Gly Ala Asp Val Asp Ser Gln
            885                    890                    895        .
Glu Leu Trp Ile Ala Ala Val Leu Gly Asp Ala His Phe Ala Gly Met
            900                    905                    910
His Gly Cys Thr Ala Phe Gly Trp Met Thr Leu Gln Gly Arg Lys Ser
        915                    920                    925
Arg Gly Thr Asp Leu His Ser Lys Thr Ala Thr Thr Val Gly Ile Ser
    930                    935                    940
Arg Glu His Ala Lys Ile Phe Asn Tyr Gly Arg Ile Tyr Gly Ala Gly
945                    950                    955                    960
Gln Pro Phe Ala Glu Arg Leu Leu Met Gln Phe Asn His Arg Leu Thr
            965                    970                    975
Gln Gln Glu Ala Ala Glu Lys Ala Gln Gln Met Tyr Ala Ala Thr Lys
        980                    985                    990
Gly Leu Arg Trp Tyr Arg Leu Ser Asp Glu Gly Glu Trp Leu Val Arg
        995                    1000                   1005
Glu Leu Asn Leu Pro Val Asp Arg Thr Glu Gly Gly Trp Ile Ser Leu
    1010                   1015                   1020
Gln Asp Leu Arg Lys Val Gln Arg Glu Thr Ala Arg Lys Ser Gln Trp
1025                   1030                   1035                   1040
Lys Lys Trp Glu Val Val Ala Glu Arg Ala Trp Lys Gly Gly Thr Glu
            1045                   1050                   1055
Ser Glu Met Phe Asn Lys Leu Glu Ser Ile Ala Thr Ser Asp Ile Pro
            1060                   1065                   1070
Arg Thr Pro Val Leu Gly Cys Cys Ile Ser Arg Ala Leu Glu Pro Ser
        1075                   1080                   1085
Ala Val Gln Glu Glu Phe Met Thr Ser Arg Val Asn Trp Val Val Gln
    1090                   1095                   1100
Ser Ser Ala Val Asp Tyr Leu His Leu Met Leu Val Ala Met Lys Trp
1105                   1110                   1115                   1120
Leu Phe Glu Glu Phe Ala Ile Asp Gly Arg Phe Cys Ile Ser Ile His
            1125                   1130                   1135
Asp Glu Val Arg Tyr Leu Val Arg Glu Glu Asp Arg Tyr Arg Ala Ala
            1140                   1145                   1150
Leu Ala Leu Gln Ile Thr Asn Leu Leu Thr Arg Cys Met Phe Ala Tyr
        1155                   1160                   1165
Lys Leu Gly Leu Asn Asp Leu Pro Gln Ser Val Ala Phe Phe Ser Ala
    1170                   1175                   1180
Val Asp Ile Tyr Arg Cys Leu Arg Lys Glu Val Thr Met Asp Cys Lys
1185                   1190                   1195                   1200
Thr Pro Ser Asn Pro Thr Gly Met Glu Arg Arg Tyr Gly Ile Pro Gln
            1205                   1210                   1215
Gly Glu Ala Leu Asp Ile Tyr Gln Ile Ile Glu Leu Thr Lys Gly Ser
        1220                   1225                   1230
Leu Glu Lys Arg Ser Gln Pro Gly Pro
    1235                   1240
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<210> 4781
<211> 344
<212> DNA
<213> Homo sapiens

<400> 4781
gaaaaagaga aaaccatggt gaacacactg tcacccagag ggcaagatgc agggatggcc
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tctggcagga cagaggcaca atcatggaag agccaggaca caaagacgac ccaaggaaat
120
gggggccaga ccaggaagct gacggcctcc aggacggtgt cagagaagca ccagggcaaa
180
gcggcaacca cagccaagac gctcattccc aaaagtcagc acagaatgct ggctcccaca
240
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300
gagaagaaac ctcaggccac cccacccct gcccctttcc agag
344

<210> 4782
<211> 109
<212> PRT
<213> Homo sapiens

<400> 4782
Met Val Asn Thr Leu Ser Pro Arg Gly Gln Asp Ala Gly Met Ala Ser
1   5   10   15
Gly Arg Thr Glu Ala Gln Ser Trp Lys Ser Gln Asp Thr Lys Thr Thr
            20   25   30
Gln Gly Asn Gly Gly Gln Thr Arg Lys Leu Thr Ala Ser Arg Thr Val
        35   40   45
Ser Glu Lys His Gln Gly Lys Ala Ala Thr Thr Ala Lys Thr Leu Ile
    50   55   60
Pro Lys Ser Gln His Arg Met Leu Ala Pro Thr Gly Ala Val Ser Thr
65   70   75   80
Arg Thr Arg Gln Lys Gly Val Thr Thr Ala Val Ile Pro Pro Lys Glu
                85   90   95
Lys Lys Pro Gln Ala Thr Pro Pro Pro Ala Pro Phe Gln
            100   105

<210> 4783
<211> 1143
<212> DNA
<213> Homo sapiens

<400> 4783
ngctcatcgc tggggtatgc agcgctgaag agcttaacct ccgcagctgc cgccactttc
60
ggatgtgggc atcgggcacc tggccggcat gacgcgcagc gcggcgaagg gctgcttggg
120
cctggagcag ctcacgctac aggactgcca gaagctcaca gatctttctc taaagcacat
180
ctcccgaggg ctgacgggcc cgcgcctcct cccccagcg ccgcggaggg gggaggagga
240

agatggagac ccacatctca tgcctgttcc cggagctgct ggccatgatc ttcggctacc
300
tggacgtccg ggacaagggg cgcgcggcgc aggtgtgcac cgcctggcgg gacgccgcct
360
accacaagtc ggtgtggcgg gggggtggag gccaagctgc acctgcgccg ggccaacccg
420
tcgctgttcc ccagcctgca ggcccggggc atccgccggg tgcagatcct gagcctccgc
480
cgcagcctca gctacgtgat ccagggcatg gccaacatcg agagcctcaa cctcagcggc
540
tgctacaacc tcaccgacaa cgggctgggc cacgcgtttg tgcaggagat cggctccctg
600
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660
cagtacctca agggcctgga ggtgctggag ctgggaggtt gcagcaacat caccaacact
720
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840
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900
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1020
ctgcgctcct gtgacaacat cagtgacacg ggcatcatgc atctggccat gggcagcctg
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1140
ata
1143

<210> 4784
<211> 212
<212> PRT
<213> Homo sapiens

<400> 4784
Met Ala Asn Ile Glu Ser Leu Asn Leu Ser Gly Cys Tyr Asn Leu Thr
1   5   10   15
Asp Asn Gly Leu Gly His Ala Phe Val Gln Glu Ile Gly Ser Leu Arg
            20   25   30
Ala Leu Asn Leu Ser Leu Cys Lys Gln Ile Thr Asp Ser Ser Leu Gly
        35   40   45
Arg Ile Ala Gln Tyr Leu Lys Gly Leu Glu Val Leu Glu Leu Gly Gly
    50   55   60
Cys Ser Asn Ile Thr Asn Thr Gly Leu Leu Leu Ile Ala Trp Gly Leu
65   70   75   80
Gln Arg Leu Lys Ser Leu Asn Leu Arg Ser Cys Arg His Leu Ser Asp
                85   90   95
Val Gly Ile Gly His Leu Ala Gly Met Thr Arg Ser Ala Ala Glu Gly
            100   105   110
Cys Leu Gly Leu Glu Gln Leu Thr Leu Gln Asp Cys Gln Lys Leu Thr

```
          115                    120                    125
Asp Leu Ser Leu Lys His Ile Ser Arg Gly Leu Thr Gly Leu Arg Leu
      130                    135                    140
Leu Asn Leu Ser Phe Cys Gly Gly Ile Ser Asp Ala Gly Leu Leu His
145                    150                    155                    160
Leu Ser His Met Gly Ser Leu Arg Ser Leu Asn Leu Arg Ser Cys Asp
                  165                    170                    175
Asn Ile Ser Asp Thr Gly Ile Met His Leu Ala Met Gly Ser Leu Arg
                  180                    185                    190
Leu Ser Gly Leu Asp Val Ser Phe Cys Asp Lys Val Gly Asp Gln Ser
          195                    200                    205
Leu Ala Tyr Ile
      210
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<210> 4785
<211> 3289
<212> DNA
<213> Homo sapiens

<400> 4785
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aaaccttagc agtagttggg cactgcatga aaaatgaagt ttacatagtt tatattatgt
120
acataaacta gtgatttaca ttgatttaca catgattggt gcctaattta ttaatcagca
180
cgcagcatgt aaatgtgctc aaaagaaatc aaggtttaaa ataagttttc cataatattc
240
ataaacattt tcgctggtgt aaatgttaaa cctaaaccca acgttaacac cagcttcctt
300
gccaagagaa aagtgagatg tacatgctgg gtgaaaacaa attctttcct aaattttggt
360
tggcgacatt tgaacagcat agctacatgc aaatgagaat agtttacttc ttttctgcta
420
gtatgcacat aaatgtaaac tccattttgc atttagtgag atgtttacag atattatgcc
480
aaccatgatg gaaaatttac atcactgagg caaatgcagt ctttggagaa gaaatattct
540
aaacatttaa gcaaggagga ggcttcctaa actgtatttt tgtttcttat ctcaccattt
600
ttttttttcca ggtctgcaga gcatttattc cgtcccagtg gggagggggca gggatccagg
660
tggccggagg gcacagggcc tacgtgtacc acatgaagcc gtggctggca tggagagcct
720
cctctgtggt gcgcagcccg tacagctccc cgatcaaggg gggcacccag cgggttgtgt
780
ggaacacaga ctccccacc ttccagtcgg gcacgtcctt catgatgatg gcctcctcct
840
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900
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<210> 4786
<211> 322
<212> PRT
<213> Homo sapiens

<400> 4786
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Ile Ile Val Ser Ala Gln Leu Leu Asp Asp Tyr Pro Lys Cys Phe Ile
            20              25              30
Val Gly Ala Asp Asn Val Gly Ser Lys Gln Met Gln Gln Ile Arg Met
            35              40              45
Ser Leu Arg Gly Lys Ala Val Val Leu Met Gly Lys Asn Thr Met Met
    50              55              60
Arg Lys Ala Ile Arg Gly His Leu Glu Asn Asn Pro Ala Leu Glu Lys
65              70              75              80
Leu Leu Pro His Ile Arg Gly Asn Val Gly Phe Val Phe Thr Lys Glu
                85              90              95
Asp Leu Thr Glu Ile Arg Asp Met Leu Leu Ala Asn Lys Val Pro Ala
            100             105             110
Ala Ala Arg Ala Gly Ala Ile Ala Pro Cys Glu Val Thr Val Pro Ala
        115             120             125
Gln Asn Thr Gly Leu Gly Pro Glu Lys Thr Ser Phe Phe Gln Ala Leu
    130             135             140
Gly Ile Thr Thr Lys Ile Ser Arg Gly Thr Ile Glu Ile Leu Ser Asp
145             150             155             160
Val Gln Leu Ile Lys Thr Gly Asp Lys Val Gly Ala Ser Glu Ala Thr
            165             170             175
Leu Leu Asn Met Leu Asn Ile Ser Pro Phe Ser Phe Gly Leu Val Ile
            180             185             190
Gln Gln Val Phe Asp Asn Gly Ser Ile Tyr Asn Pro Glu Val Leu Asp
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          195                    200                    205
Ile Thr Glu Glu Thr Leu His Ser Arg Phe Leu Glu Gly Val Arg Asn
    210                    215                    220
Val Ala Ser Val Cys Leu Gln Ile Gly Tyr Pro Thr Val Ala Ser Val
225                    230                    235                    240
Pro His Ser Ile Ile Asn Gly Tyr Lys Arg Val Leu Ala Leu Ser Val
                   245                    250                    255
Glu Thr Asp Tyr Thr Phe Pro Leu Ala Glu Lys Val Lys Ala Phe Leu
               260                    265                    270
Ala Asp Pro Ser Ala Phe Val Ala Ala Ala Pro Val Ala Ala Ala Thr
           275                    280                    285
Thr Ala Ala Pro Ala Ala Ala Ala Ala Ala Pro Ala Lys Val Glu
       290                    295                    300
Ala Lys Glu Glu Ser Glu Glu Ser Asp Glu Asp Met Gly Phe Gly Leu
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Phe Asp
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<210> 4787
<211> 1258
<212> DNA
<213> Homo sapiens

<400> 4787
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240
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420
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480
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720
atggagcaga acacactgca gaaacacacg cggtggaagc atccatgagc cgggctgccg
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900
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1258

<210> 4788
<211> 197
<212> PRT
<213> Homo sapiens

<400> 4788
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Val Glu Thr Met Glu Gly Pro Pro Arg Arg Thr Cys Arg Ser Pro Glu
            20   25   30
Pro Gly Pro Ser Ser Ser Ile Gly Ser Pro Gln Ala Ser Ser Pro Pro
        35   40   45
Arg Pro Asn His Tyr Leu Leu Ile Asp Thr Gln Gly Val Pro Tyr Thr
    50   55   60
Val Leu Val Asp Glu Glu Ser Gln Arg Glu Pro Gly Ala Ser Gly Ala
65   70   75   80
Pro Gly Gln Lys Lys Cys Tyr Ser Cys Pro Val Cys Ser Arg Val Phe
                85   90   95
Glu Tyr Met Ser Tyr Leu Gln Arg His Ser Ile Thr His Ser Glu Val
            100   105   110
Lys Pro Phe Glu Cys Asp Ile Cys Gly Lys Ala Phe Lys Arg Ala Ser
            115   120   125
His Leu Ala Arg His His Ser Ile His Leu Ala Gly Gly Gly Arg Pro
    130   135   140
His Gly Cys Pro Leu Cys Pro Arg Arg Phe Arg Asp Ala Gly Glu Leu
145   150   155   160
Ala Gln His Ser Arg Val His Ser Gly Glu Arg Pro Phe Gln Cys Pro
                165   170   175
His Cys Pro Arg Arg Phe Met Glu Gln Asn Thr Leu Gln Lys His Thr
                180   185   190
Arg Trp Lys His Pro
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<210> 4789
<211> 1515
<212> DNA
<213> Homo sapiens

<400> 4789
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<210> 4790
<211> 241
<212> PRT
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<213> Homo sapiens

<400> 4790
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Ile Leu Gly Phe Ala Ser Ala Phe Tyr Ile Ile Phe Gln Thr Glu Asp
            20                  25                  30
Pro Glu Glu Leu Gly His Phe Tyr Asp Tyr Pro Met Ala Leu Phe Ser
        35                  40                  45
Thr Phe Glu Leu Phe Leu Thr Ile Ile Asp Gly Pro Ala Asn Tyr Asn
    50                  55                  60
Val Asp Leu Pro Phe Met Tyr Ser Ile Thr Tyr Ala Ala Phe Ala Ile
65                  70                  75                  80
Ile Ala Thr Leu Leu Met Leu Asn Leu Leu Ile Ala Met Met Gly Asp
            85                  90                  95
Thr His Trp Arg Val Ala His Glu Arg Asp Glu Leu Trp Arg Ala Gln
            100                 105                 110
Ile Val Ala Thr Thr Val Met Leu Glu Arg Lys Leu Pro Arg Cys Leu
            115                 120                 125
Trp Pro Arg Ser Gly Ile Cys Gly Arg Glu Tyr Gly Leu Gly Asp Arg
        130                 135                 140
Trp Phe Leu Arg Val Glu Asp Arg Gln Asp Leu Asn Arg Gln Arg Ile
145                 150                 155                 160
Gln Arg Tyr Ala Gln Ala Phe His Thr Arg Gly Ser Glu Asp Leu Asp
                165                 170                 175
Lys Asp Ser Val Glu Lys Leu Glu Leu Gly Cys Pro Phe Ser Pro His
            180                 185                 190
Leu Ser Leu Pro Met Pro Ser Val Ser Arg Ser Thr Ser Arg Ser Ser
        195                 200                 205
Ala Asn Trp Glu Arg Leu Arg Gln Gly Thr Leu Arg Arg Asp Leu Arg
    210                 215                 220
Gly Ile Ile Asn Arg Gly Leu Glu Asp Gly Glu Ser Trp Glu Tyr Gln
225                 230                 235                 240
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<210> 4791
<211> 4481
<212> DNA
<213> Homo sapiens

<400> 4791
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120
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180
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240
tggattaaag acttaaatat aaaacctaaa agtattaaat tcctagaaga caacccagga
300
aatgccattc tggacataag tgctggaaaa gacttaatga tgaacaccnc caaagcaatt
360
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480
gagaaaatat tttcaaacta tgcatctgac aaaggtctaa tatccagcat ctataaggaa
540
cttaaacaaa tttactaggg aaaaacagac aatcccatta aaaagtgggc aaaggacatg
600
aacagacact tctcaaaaga agacatacaa gcaatcaaca aanncgtgaa aaaatgctca
660
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720
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1980
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3360
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3600
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4481

<210> 4792
<211> 179
<212> PRT
<213> Homo sapiens

<400> 4792
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Ser Lys Ile Lys Leu His Thr Tyr His His Leu Ile Val Asp Lys Ala
                20   25   30
Asn Lys Asn Lys Gln Trp Gly Lys Gly Thr Leu Phe Asn Lys Trp Cys
            35   40   45
Trp Asp Asn Ser Leu Ala Ile Cys Arg Ile Val Lys Leu Asp Pro Tyr
        50   55   60
Pro Ser Arg Tyr Thr Lys Ile Asn Ser Arg Trp Ile Lys Asp Leu Asn
65   70   75   80
Ile Lys Pro Lys Ser Ile Lys Phe Leu Glu Asp Asn Pro Gly Asn Ala
                85   90   95
Ile Leu Asp Ile Ser Ala Gly Lys Asp Leu Met Met Asn Thr Xaa Lys
            100   105   110
Ala Ile Thr Thr Lys Thr Lys Ile Asp Lys Trp Asp Leu Ile Lys Leu
        115   120   125
Asn Asn Phe Cys Thr Ala Lys Glu Thr Ile Asn Arg Val Asp Arg Gln

3973

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         130              135              140
Pro Thr Glu Trp Glu Lys Val Leu Ala Trp Glu Lys Ile Phe Ser Asn
145              150              155              160
Tyr Ala Ser Asp Lys Gly Leu Ile Ser Ser Ile Tyr Lys Glu Leu Lys
                165              170              175
Gln Ile Tyr
```

<210> 4793
<211> 1242
<212> DNA
<213> Homo sapiens

<400> 4793
caattgcaat taaacatgga cagaaaatcc tcctccccgt tgttcttaga acaagaataa
60
caatgaagtt aaaagccacc tggaagggcc cctcctcacc cttggtctct caaattccat
120
tttttagtcc tcctgaaggc ccacagcacc actgctgtca gccagcctct tggcaggttg
180
ataggtgact tcatttggta ccaacaacac agatgctttc aacatcata acaacctcac
240
agatgccctt tttaatatct gcgtatgtta cgttatagag ctgtaccatg agttagtgtc
300
tattttcgtc catttacatt gctataaagg attacctgag gctgggtaat taaagaggtt
360
tacttggctc acggctctgc aggctgtaca agcagcacgg tgccagcgtc tgcttctggt
420
gagggcctca ggctacttcc agcatggcag aaggcgaagg agagctagcg tgtgcagaga
480
tcacatggca acagaggaag aaggcagagg tgctctttaa caaccagttc ttccgagaga
540
gttccacgtg gctggaactt cacaatcatg gcagaaggca cgtctgcgag gcatcctggg
600
gctgcactgc tgatcctctt ctctctcccc tggccctgag tgctgccttc atgtggctca
660
gcccttccgt ccttcaagcc ttcatcagct tcagggcagc cccgagtctg tgcccaggta
720
cactggctaa aatgcagtgt cttccaaata gccatatctc attttaatca gggagcaatt
780
ccagcatgga agtccccatc atgctcctgc tggcaggtac aggtgccagt ttgtgacgga
840
tgaaagcacc gacagcccac gcgtcttcat catggaggcc tgtgccccag actgtgccca
900
gcacaacagc tgggcggcaa gggtgggcca gggtcgagca aatgacacgt ccctttggc
960
taaggaagac accccagaag caaaatgctc catgcaacag ccaggcattc aggctacaag
1020
ctcggtggcg gggaggcagc cgggagcctt ctcagaggag aagggtcccg tgatcattcc
1080
acagatgctt ttagagctct gggctcaggg taaccgacca attatggtgc tgccagaggg
1140
cctgcattta ctatacacac gtcacaaaat caggcttccc cgggaggagc catcggactc
1200
```

tgtgcagagg gcccatgtga caatataaaa ggtcgacgcg gc
1242


<210> 4794
<211> 118
<212> PRT
<213> Homo sapiens

<400> 4794
Met Glu Ala Cys Ala Pro Asp Cys Ala Gln His Asn Ser Trp Ala Ala
1               5                   10                  15
Arg Val Gly Gln Gly Arg Ala Asn Asp Thr Phe Pro Leu Ala Lys Glu
            20                  25                  30
Asp Thr Pro Glu Ala Lys Cys Ser Met Gln Gln Pro Gly Ile Gln Ala
        35                  40                  45
Thr Ser Ser Val Ala Gly Arg Gln Pro Gly Ala Phe Ser Glu Glu Lys
    50                  55                  60
Gly Pro Val Ile Ile Pro Gln Met Leu Leu Glu Leu Trp Ala Gln Gly
65                  70                  75                  80
Asn Arg Pro Ile Met Val Leu Pro Glu Gly Leu His Leu Leu Tyr Thr
                85                  90                  95
Arg His Lys Ile Arg Leu Pro Arg Glu Glu Pro Ser Asp Ser Val Gln
            100                 105                 110
Arg Ala His Val Thr Ile
            115


<210> 4795
<211> 2117
<212> DNA
<213> Homo sapiens

<400> 4795
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tccttaagat cattatgtgg aattctcttt cagaaaactc atacattttc atttatttgg
120
ggtcagttag cagagaatta ttgttttccc ttggtagtat cacttttcct tgctttttct
180
tatttcttgt gtccctgcat aggtgtctcc acatctggtg gtataatcgg ctctctcaaa
240
ctttatagag tggctttcag aggggaagat tttcatctgc agatgggcct ggggcttttg
300
gttgagcagg ctctggtggc tttcatttca tgtgggtcca ggccctccgg cagcagtgaa
360
ttgagagccc aggcctgcac ggcccacagt gcagggtcc ccgggctctc catccccact
420
tccagttggc taccctgat gaaggggcca cctgaggtgg ctcagagtaa tatccagacc
480
cagccagtga acagggagat ggatgctgcc ggctttgact tctcactgcc atgcactcaa
540
aagctaacac agaatggcac aaggagtcag tggggcctct ccctgccagc tctcatgacc
600
gagggcagtg taaaacatgg tttaggagat gtttctatcc tcaagaagac attcagcacc
660

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aggcttcaga actcagattg gtttctcacc actttgaaag actgcatgac tcttcaccca
720
ctagaggcat cacctcccca ggacaaacag ccctccatca tgaaggacca acattgcatg
780
aactggtgct tggccccacc agagggaaat gcaaacgtgg catttagccc atatggcttt
840
cttgcatggg gtcactacat cagtgccatg gacccctgca ccctcttacc cttggcgggt
900
ccacatgccc aggcccccca gggtgtggcc ccaaaagtga caaccagagg attgggacca
960
gcaggagcat cactgtggac agtctatgag gacagtaaga gacagggcct gtccctggag
1020
attgtacagg gcttgcaagg acaggctggt cctgagagca tcagccctgt cgtgactgta
1080
ccccaaagag gcatcaggcc ctttgggaag ttggacagga acaccagaat ggccagcctt
1140
gactgcaagt ccctggagtg gcagcccctg gcaatacttc tggaacagaa aaacatggca
1200
gcagacgggc ccgtgctcaa ttcaccagag cccaagccag cccaaggcag ctgcttcctg
1260     .      ..
ctacagagag tcgcttcaga agtgctttgt gctacagtcc ctgcccgtgg catccagggc
1320
tggccagagc ccaagccctc cccaggctca gagctctcag ccctcaaagc acacgaagtc
1380
ttacaaatca tgctgggctt acccactgag gacatgctgg tgagaaagca ggcaccacag
1440
cccctgttcc ttcctgatgg tcatgtgcag ctgtgctcca aaggacagca gaggttggaa
1500
cagagggcgt gtcggaggag atccagggac aacactcaac agaggaacac tgatatgtct
1560
ccatatcccc agcgcccagc ccagggcctg gtgtggagca gagcagaccc caccacggtt
1620
acagacagcg atgcagacat aacactacaa gcatatccat caggagtcaa gtcatggggc
1680
tgtccccagg aaatcagctc attagtgtgg ctgaccaagg ccatgctggc ccttagaggt
1740
ggctgctcca gctccagcag cgactctatg ggcaggaaag cctgggttct gttcaaccca
1800
cagcagacca cactcaggtg ggccctgtaa gtgagccctt cttccaaaa tggccactgg
1860
atccaatttc tctcactggg aatcaaggca gcattggtag gtaacaaatg tgtgaacaga
1920
caaaccagct tctgagtaga atcctattac ataaaacctg acaagctgca gagggcatct
1980
ggtcacccat gtagttctat cagtgggcaa atccaagcac tctggagagg acaagtact
2040
tgcctaatga ctgcaagact cccaacccag cactgtatcc aagcacacac cacaaccatg
2100
tcctcccaga ctcctgg
2117
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```
<210> 4796
<211> 541
<212> PRT
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<213> Homo sapiens

<400> 4796

Val	Ser	Thr	Ser	Gly	Gly	Ile	Ile	Gly	Ser	Leu	Lys	Leu	Tyr	Arg	Val
1				5					10				15	

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Val Ser Thr Ser Gly Gly Ile Ile Gly Ser Leu Lys Leu Tyr Arg Val
1               5                   10                  15
Ala Phe Arg Gly Glu Asp Phe His Leu Gln Met Gly Leu Gly Leu Leu
            20              25                  30
Val Glu Gln Ala Leu Val Ala Phe Ile Ser Cys Gly Ser Arg Pro Ser
        35              40              45
Gly Ser Ser Glu Leu Arg Ala Gln Ala Cys Thr Ala His Ser Ala Gly
    50              55              60
Val Pro Gly Leu Ser Ile Pro Thr Ser Ser Trp Leu Pro Leu Met Lys
65              70              75                  80
Gly Pro Pro Glu Val Ala Gln Ser Asn Ile Gln Thr Gln Pro Val Asn
            85              90                  95
Arg Glu Met Asp Ala Ala Gly Phe Asp Phe Ser Leu Pro Cys Thr Gln
            100             105                 110
Lys Leu Thr Gln Asn Gly Thr Arg Ser Gln Trp Gly Leu Ser Leu Pro
        115             120                 125
Ala Leu Met Thr Glu Gly Ser Val Lys His Gly Leu Gly Asp Val Ser
    130             135                 140
Ile Leu Lys Lys Thr Phe Ser Thr Arg Leu Gln Asn Ser Asp Trp Phe
145             150                 155                 160
Leu Thr Thr Leu Lys Asp Cys Met Thr Leu His Pro Leu Glu Ala Ser
            165             170                 175
Pro Pro Gln Asp Lys Gln Pro Ser Ile Met Lys Asp Gln His Cys Met
            180             185                 190
Asn Trp Cys Leu Ala Pro Pro Glu Gly Asn Ala Asn Val Ala Phe Ser
            195             200                 205
Pro Tyr Gly Phe Leu Ala Trp Gly His Tyr Ile Ser Ala Met Asp Pro
    210             215                 220
Cys Thr Leu Leu Pro Leu Ala Gly Pro His Ala Gln Ala Pro Gln Gly
225             230             235                 240
Val Ala Pro Lys Val Thr Thr Arg Gly Leu Gly Pro Ala Gly Ala Ser
            245             250                 255
Leu Trp Thr Val Tyr Glu Asp Ser Lys Arg Gln Gly Leu Ser Leu Glu
            260             265                 270
Ile Val Gln Gly Leu Gln Gly Gln Ala Gly Pro Glu Ser Ile Ser Pro
    275             280                 285
Val Val Thr Val Pro Gln Arg Gly Ile Arg Pro Phe Gly Lys Leu Asp
    290             295                 300
Arg Asn Thr Arg Met Ala Ser Leu Asp Cys Lys Ser Leu Glu Trp Gln
305             310             315                 320
Pro Leu Ala Ile Leu Leu Glu Gln Lys Asn Met Ala Ala Asp Gly Pro
            325             330                 335
Val Leu Asn Ser Pro Glu Pro Lys Pro Ala Gln Gly Ser Cys Phe Leu
            340             345                 350
Leu Gln Arg Val Ala Ser Glu Val Leu Cys Ala Thr Val Pro Ala Arg
            355             360                 365
Gly Ile Gln Gly Trp Pro Glu Pro Lys Pro Ser Pro Gly Ser Glu Leu
    370             375                 380
Ser Ala Leu Lys Ala His Glu Val Leu Gln Ile Met Leu Gly Leu Pro
385             390                 395                 400
Thr Glu Asp Met Leu Val Arg Lys Gln Ala Pro Gln Pro Leu Phe Leu
```

```
                    405                    410                    415
Pro Asp Gly His Val Gln Leu Cys Ser Lys Gly Gln Gln Arg Leu Glu
                420                    425                    430
Gln Arg Ala Cys Arg Arg Arg Ser Arg Asp Asn Thr Gln Gln Arg Asn
            435                    440                    445
Thr Asp Met Ser Pro Tyr Pro Gln Arg Pro Ala Gln Gly Leu Val Trp
        450                    455                    460
Ser Arg Ala Asp Pro Thr Thr Val Thr Asp Ser Asp Ala Asp Ile Thr
    465                    470                    475                    480
Leu Gln Ala Tyr Pro Ser Gly Val Lys Ser Trp Gly Cys Pro Gln Glu
                    485                    490                    495
Ile Ser Ser Leu Val Trp Leu Thr Lys Ala Met Leu Ala Leu Arg Gly
                500                    505                    510
Gly Cys Ser Ser Ser Ser Ser Asp Ser Met Gly Arg Lys Ala Trp Val
            515                    520                    525
Leu Phe Asn Pro Gln Gln Thr Thr Leu Arg Trp Ala Leu
        530                    535                    540
```

<210> 4797
<211> 2848
<212> DNA
<213> Homo sapiens

<400> 4797

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ncctccctcc ttccttccgc cgcaacatgg ctaacaacag ccccgcgctg acaggcaact
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cgcagccgca gcaccaggcg gctgcagctg cggctcagca acagcagcag tgcggcggcg
120
gcggcgctac caagccggcg gtctccggca agcagggcaa tgtgctcccg ctctggggca
180
acgagaagac catgaacctc aaccccatga tcctgaccaa catcctgtcg tcgccttact
240
tcaaagtaca gctctacgag ctcaagacct accacgaggt ggtggacgag atctacttta
300
aggtcacgca cgttgaacca tgggagaaag gaagcaggaa aacagcgggc cagacaggga
360
tgtgcggagg ggtaagtaga agttcgaggt gttggaacag gaggaattgt ttctacagca
420
ttttgcctgt tatacaaatt atttaccctg aagttaactc gaaagcaagt gatgggtctt
480
ataacacaca cagactctcc atatattaga gcgcttggat ttatgtatat aagatataca
540
cagcccccta cagatctgtg ggactggttt gaatccttcc ttgatgatga agaggactta
600
gatgtgaagg ctggtggagg ctgtgtaatg accattggag aaatgctacg atctttctc
660
acaaaactgg agtggttttc taccttgttt ccaagaattc cagttccagt tcaaaagaat
720
attgatcaac agattaaaac ccgacctaga aaaatcaaga agatgggaa ggaaggtgct
780
gaggaaatag acagacatgt tgaacgcaga cgttcaaggt ctccaaggag atctctgagt
840
ccacggaggt ccccaagaag gtcaagaagt agaagtcatc atcgggaggg ccatgggtct
900
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tctagttttg acagagaatt agaaagagag aaagaacgcc agcgactaga gcgtgaagcc
960
aaagaaaggg agaaagaacg gcgaagatcc cgaagtattg accgggggtt agaacgcagg
1020
cgcagcagaa gtagggaaag gcatagaagt cgcagtcgaa gtcgtgatag gaaagggggat
1080
agaagggaca gggatcgaga aagagagaaa gaaaatgaga gaggtagaag acgagatcgt
1140
gactatgata aggaagagg aaatgaacga gaaaagaga gagagcgatc aagagaaagg
1200
tccaaggaac agagaagtag gggagaggta gaagagaaga aacataaaga agacaaagat
1260
gataggcggc acagagatga caaaagagat tccaagaaag agaaaaaaca cagtagaagc
1320
agaagcagag aaaggaaaca cagaagtagg agtcgaagta gaaatgcagg gaaacgaagt
1380
agaagtagaa gcaaagagaa atcaagtaaa cataaaaatg aaagtaaaga aaaatcaaat
1440
aaacgaagtc gaagtggcag tcaaggaaga actgacagtg ttgaaaaatc aaaaaaacgg
1500
gaacatagtc ccagcaaaga aaaatctaga aagcgtagta gaagcaaaga acgttcccac
1560
aaacgagatc acagtgatag taaggaccag tcagacaaac atgatcgtcg aaggagccaa
1620
agtatagaac aagagagcca agaaaaacag cataaaaaca aagatgagac tgtgtgaaaa
1680
tattttgtaa aagtggatca cattgaatcc tataaatgat taaatctgct ttttttccccc
1740
acgttgagat tgtgcagtag ttcgcactcc tcaagctctc cctgtaggct gcattttcat
1800
ttcctctttc gtgtagggaa gtgcctttgt aattccattt attgcattgg tgttttcacc
1860
caattgttaa gtttgataca tgatgcacag attgttcttg cattttatt gtttgttttt
1920
gaaatgtaca gtctgtacat atgtcctgaa aatgtttttaa ttcctttggc atggttgcca
1980
tgttggttaa atttgtataa ggcaataaac tgccactaat ctatttttgt tttgtaggtg
2040
tgggattatg gtttgtgtac tgaagttagc atggctgtgc ttttcgtaat agaatgctaa
2100
agactttgag aatggatctt ggatgtctat tataggagaa gtatgtgctg ccaatgtaca
2160
agaaggcagc attgtaggat taacattctt gtctactgta tattatcttg gaaggctctt
2220
gttaatatgt tacacttaat attctccaca gttacctttta gagagaattt atgagaagtt
2280
agtttctgat gcagaggttt ttaggctgtg atttcatcaa aagtcctttt agcattctac
2340
ctcaaaggga cacttagtat gcctaaaatt tattcactta gttttccttt tttatttgaa
2400
aaaatacatg acatgtaatc ttttttttctt gaattctttc tcagatttta aagtactata
2460
ttaaagaaaa aaattaatgt ctaaagccta gcattcttgc agaaccctat actaacatgt
2520
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aatgggggaga gggtgggggca gatgagtaga gaaacagatt caagcctcaa gcttccaaag
2580
catttttata aatggaaaat ccttaaatta tgaaacagct tgatatagtg tcctttttt
2640
aaaattcaga actttttta ttgataatgg agattgctgt ttgagttttt aaacttaatc
2700
tagaacagag gagtattaaa agtaatgctg tgctgcatta tttaagacta tcagcaaatt
2760
atttgataga ttgttcttac aacttgtatt ctgattacag aaccatcatg agtgtggaat
2820
aaatactgga ttaaatcctt taaaaaaa
2848
```

<210> 4798
<211> 401
<212> PRT
<213> Homo sapiens

<400> 4798

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Met Gly Leu Ile Thr His Thr Asp Ser Pro Tyr Ile Arg Ala Leu Gly
1               5                   10                  15
Phe Met Tyr Ile Arg Tyr Thr Gln Pro Pro Thr Asp Leu Trp Asp Trp
            20                  25                  30
Phe Glu Ser Phe Leu Asp Asp Glu Glu Asp Leu Asp Val Lys Ala Gly
        35                  40                  45
Gly Gly Cys Val Met Thr Ile Gly Glu Met Leu Arg Ser Phe Leu Thr
    50                  55                  60
Lys Leu Glu Trp Phe Ser Thr Leu Phe Pro Arg Ile Pro Val Pro Val
65                  70                  75                  80
Gln Lys Asn Ile Asp Gln Gln Ile Lys Thr Arg Pro Arg Lys Ile Lys
                85                  90                  95
Lys Asp Gly Lys Glu Gly Ala Glu Glu Ile Asp Arg His Val Glu Arg
            100                 105                 110
Arg Arg Ser Arg Ser Pro Arg Arg Ser Leu Ser Pro Arg Arg Ser Pro
        115                 120                 125
Arg Arg Ser Arg Ser Arg Ser His His Arg Glu Gly His Gly Ser Ser
    130                 135                 140
Ser Phe Asp Arg Glu Leu Glu Arg Glu Lys Glu Arg Gln Arg Leu Glu
145                 150                 155                 160
Arg Glu Ala Lys Glu Arg Glu Lys Glu Arg Arg Arg Ser Arg Ser Ile
                165                 170                 175
Asp Arg Gly Leu Glu Arg Arg Arg Ser Arg Ser Arg Glu Arg His Arg
            180                 185                 190
Ser Arg Ser Arg Ser Arg Asp Arg Lys Gly Asp Arg Arg Asp Arg Asp
        195                 200                 205
Arg Glu Arg Glu Lys Glu Asn Glu Arg Gly Arg Arg Arg Asp Arg Asp
    210                 215                 220
Tyr Asp Lys Glu Arg Gly Asn Glu Arg Glu Lys Glu Arg Glu Arg Ser
225                 230                 235                 240
Arg Glu Arg Ser Lys Glu Gln Arg Ser Arg Gly Glu Val Glu Glu Lys
                245                 250                 255
Lys His Lys Glu Asp Lys Asp Asp Arg Arg His Arg Asp Asp Lys Arg
            260                 265                 270
Asp Ser Lys Lys Glu Lys Lys His Ser Arg Ser Arg Ser Arg Glu Arg
```

```
              275                    280                    285
Lys His Arg Ser Arg Ser Arg Ser Arg Asn Ala Gly Lys Arg Ser Arg
          290                    295                    300
Ser Arg Ser Lys Glu Lys Ser Ser Lys His Lys Asn Glu Ser Lys Glu
305                    310                    315                    320
Lys Ser Asn Lys Arg Ser Arg Ser Gly Ser Gln Gly Arg Thr Asp Ser
              325                    330                    335
Val Glu Lys Ser Lys Lys Arg Glu His Ser Pro Ser Lys Glu Lys Ser
                  340                    345                    350
Arg Lys Arg Ser Arg Ser Lys Glu Arg Ser His Lys Arg Asp His Ser
              355                    360                    365
Asp Ser Lys Asp Gln Ser Asp Lys His Asp Arg Arg Arg Ser Gln Ser
          370                    375                    380
Ile Glu Gln Glu Ser Gln Glu Lys Gln His Lys Asn Lys Asp Glu Thr
385                    390                    395                    400
Val
```

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<210> 4799
<211> 358
<212> DNA
<213> Homo sapiens
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<400> 4799
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60
ctttctgttc tacttccccg cggcctacta cgcctcccgc cgtgtgggca tcgcggtgct
120
ctggatcagc ctcatcaccg agtggctcaa cctcatcttc aagtggtgag acagagaagc
180
cctccggcat cctggtcccc accccgagg gccctgagtc atgtgtttct ttttggagac
240
aggcccattt ggtgggtcca tgagtctggt tactacagcc aggctccagc ccaggttcac
300
cagttcccct cttcttgtga gactggtcca ggcagccctt ctggacactg catgatca
358
```

```
<210> 4800
<211> 119
<212> PRT
<213> Homo sapiens
```

```
<400> 4800
Ala Ser Leu Ala Gly Glu Arg Val Ala Leu Asp His Leu Ser Gly Arg
1               5                    10                     15
Ser Gln Asp Pro Leu Ser Val Leu Leu Pro Arg Gly Leu Leu Arg Leu
              20                     25                     30
Pro Pro Cys Gly His Arg Gly Ala Leu Asp Gln Pro His His Arg Val
              35                     40                     45
Ala Gln Pro His Leu Gln Val Val Arg Gln Arg Ser Pro Pro Ala Ser
          50                     55                     60
Trp Ser Pro Pro Pro Arg Ala Leu Ser His Val Phe Leu Phe Gly Asp
65                     70                     75                     80
Arg Pro Phe Trp Trp Val His Glu Ser Gly Tyr Tyr Ser Gln Ala Pro
```

```
                    85                  90                  95
Ala Gln Val His Gln Phe Pro Ser Ser Cys Glu Thr Gly Pro Gly Ser
                   100                 105                 110
Pro Ser Gly His Cys Met Ile
         115
```

<210> 4801
<211> 1447
<212> DNA
<213> Homo sapiens

<400> 4801

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ttggagatca gagggtcgac gctgcttcgt tgcctggact ctggtttccg ccctggagca
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agccggggcc tggtcggcag ctgggccgcc atggagtcca cgctgggcgc gggcatcgtg
120
atagccgagg cgctacagaa ccagctagcc tggctggaga acgtgtggct ctggatcacc
180
tttctgggcg atcccaagat cctctttctg ttctacttcc ccgcggccta ctacgcctcc
240
cgccgtgtgg gcatcgcggt gctctggatc agcctcatca ccgagtggct caacctcatc
300
ttcaagtggt ttcttttggg agacaggccc ttttggtggg tccatgagtc tggttactac
360
agccaggctc cagcccaggt tcaccagttc ccctcttctt gtgagactgg tccaggcagc
420
ccttctggac actgcatgat cacaggagca gccctctggc ccataatgac agccctgtct
480
tcgcaggtgg ccactcgggc ccgcagccgc tgggtaaggg tgatgcctag cctggcttat
540
tgcaccttcc ttttggcggt tggcttgtcg cgaatcttca tcttagcaca tttccctcac
600
caggtgctgg ctggcctaat aactggcgct gtcctgggct ggctgatgac tnnccccgag
660
tgcctatgga gcgggagcnt aagcttctat gggttgactg cactggccct catgctaggc
720
accagcctca tctattggac cctctttaca ctgggcctgg atctttcttg gtccatcagc
780
ctagccttca gtggtgtga gcggcctgag tggatacacg tggatagccg gccctttgcc
840
tccctgagcc gtgactcagg ggctgccctg ggcctgggca ttgccttgca ctctccctgc
900
tatgcccagg tgcgtcgggc acagctggga aatggccaga agatagcctg ccttgtgctg
960
gccatggggc tgctgggccc cctggactgg ctgggccacc cccctcagat cagcctcttc
1020
tacattttca atttcctcaa gtacaccctc tggccatgcc tagtcctggc cctcgtgccc
1080
tgggcagtgc acatgttcag tgcccaggaa gcaccgccca tccactcttc ctgacttctt
1140
gtgtgcctcc ctttcctttc cctcccacaa agccaacact ctgtgaccac cacactccag
1200
gaggcagccc catccccttc cagcccctaa gtaggccctc ccctccctaa atctgcttcc
1260
```

```
gcaccacctg gtcttagccc caaagatggg ccttctctct cccagataag ttggtcctcc
1320
ctctgccttt cctctcaagc ccccaaagag caaaggcaac agcaagacca gcgggttctt
1380
gcaacactgt gaggggcagc cagggcggcc ccaataaagc ccttgaatac tttgaaaaaa
1440
aaaaaaa
1447
```

```
<210> 4802
<211> 377
<212> PRT
<213> Homo sapiens

<400> 4802
Leu Glu Ile Arg Gly Ser Thr Leu Leu Arg Cys Leu Asp Ser Gly Phe
1               5                   10                  15
Arg Pro Gly Ala Ser Arg Gly Leu Val Gly Ser Trp Ala Ala Met Glu
            20                  25                  30
Ser Thr Leu Gly Ala Gly Ile Val Ile Ala Glu Ala Leu Gln Asn Gln
            35                  40                  45
Leu Ala Trp Leu Glu Asn Val Trp Leu Trp Ile Thr Phe Leu Gly Asp
        50                  55                  60
Pro Lys Ile Leu Phe Leu Phe Tyr Phe Pro Ala Ala Tyr Tyr Ala Ser
65                  70                  75                  80
Arg Arg Val Gly Ile Ala Val Leu Trp Ile Ser Leu Ile Thr Glu Trp
                85                  90                  95
Leu Asn Leu Ile Phe Lys Trp Phe Leu Phe Gly Asp Arg Pro Phe Trp
            100                 105                 110
Trp Val His Glu Ser Gly Tyr Tyr Ser Gln Ala Pro Ala Gln Val His
            115                 120                 125
Gln Phe Pro Ser Ser Cys Glu Thr Gly Pro Gly Ser Pro Ser Gly His
            130                 135                 140
Cys Met Ile Thr Gly Ala Ala Leu Trp Pro Ile Met Thr Ala Leu Ser
145                 150                 155                 160
Ser Gln Val Ala Thr Arg Ala Arg Ser Arg Trp Val Arg Val Met Pro
                165                 170                 175
Ser Leu Ala Tyr Cys Thr Phe Leu Leu Ala Val Gly Leu Ser Arg Ile
            180                 185                 190
Phe Ile Leu Ala His Phe Pro His Gln Val Leu Ala Gly Leu Ile Thr
            195                 200                 205
Gly Ala Val Leu Gly Trp Leu Met Thr Xaa Pro Glu Cys Leu Trp Ser
        210                 215                 220
Gly Ser Xaa Ser Phe Tyr Gly Leu Thr Ala Leu Ala Leu Met Leu Gly
225                 230                 235                 240
Thr Ser Leu Ile Tyr Trp Thr Leu Phe Thr Leu Gly Leu Asp Leu Ser
                245                 250                 255
Trp Ser Ile Ser Leu Ala Phe Lys Trp Cys Glu Arg Pro Glu Trp Ile
            260                 265                 270
His Val Asp Ser Arg Pro Phe Ala Ser Leu Ser Arg Asp Ser Gly Ala
            275                 280                 285
Ala Leu Gly Leu Gly Ile Ala Leu His Ser Pro Cys Tyr Ala Gln Val
            290                 295                 300
Arg Arg Ala Gln Leu Gly Asn Gly Gln Lys Ile Ala Cys Leu Val Leu
```

```
305                    310                    315                    320
Ala Met Gly Leu Leu Gly Pro Leu Asp Trp Leu Gly His Pro Pro Gln
                325                        330                    335
Ile Ser Leu Phe Tyr Ile Phe Asn Phe Leu Lys Tyr Thr Leu Trp Pro
            340                        345                    350
Cys Leu Val Leu Ala Leu Val Pro Trp Ala Val His Met Phe Ser Ala
        355                        360                    365
Gln Glu Ala Pro Pro Ile His Ser Ser
    370                        375
```

<210> 4803
<211> 564
<212> DNA
<213> Homo sapiens

<400> 4803
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ggaaagccca ggacttagaa tcagcacact taggcactag cttataaaat attctgttgt
60
ataaaaaaag agagagagtg cctgtgtgca catgctgccc tgtacctagc cacatgactt
120
ccaaaacctg ctaatgcctg atttccatta cgtgctactc ctcaaatggc agcggcttct
180
gaatattaca gagatggtgt gctgtttgct tttctctttt gttgtagcat aaaactgttc
240
attttagctt agtgacattt gtcaagaata gcaacctttt tgcttccaag ggacttgaag
300
gaagttaaat ttagatgctt tcctctcttc ttattttgtg gaggtatttc ctgttcagta
360
gcaaatcagt tatagaatat attagcattg ttatatttta aactaatgac taatcatttc
420
agctttattc atactgttgc attttatatt tcacagggag caatagaaaa agtgaaagaa
480
agtgacaaac tagttgcaac aagtaaaatc accctacaag acaaacagaa catggtgaag
540
agagtcagca tcatgtctta cgcg
564
```

<210> 4804
<211> 53
<212> PRT
<213> Homo sapiens

<400> 4804
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Met Thr Asn His Phe Ser Phe Ile His Thr Val Ala Phe Tyr Ile Ser
1                   5                   10                  15
Gln Gly Ala Ile Glu Lys Val Lys Glu Ser Asp Lys Leu Val Ala Thr
                20                  25                  30
Ser Lys Ile Thr Leu Gln Asp Lys Gln Asn Met Val Lys Arg Val Ser
            35                  40                  45
Ile Met Ser Tyr Ala
        50
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<210> 4805
<211> 1619

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<212> DNA
<213> Homo sapiens

<400> 4805
ggccttggat acctggcccg ggatgctggg cggcgtcagg taaccatgga gaaagagctg
60
cggagtacca ttcttttcaa tgcctacaaa aaggagatat ttaccaccaa caatggctac
120
aaatccatgc agaaaaaact tcggagtaat tggaagattc agagcttaaa agatgaaatc
180
acatctgaga agttaaatgg agtaaaactg tggattacag ctgggccaag ggaaaaattt
240
actgcagctg agtttgaaat cctgaagaaa tatcttgaca ctggtgggga tgtccttgtg
300
atgctagggg aaggtggaga atccagattt gacaccaata ttaacttttt actagaagaa
360
tatggaatca tggttaataa tgatgctgtg gttagaaatg tatatcacaa atatttccat
420
cctaaagaag ctctagtttc cagtggagtc ttgaacaggg aaattagccg agctgcagga
480
aaggctgtgc tggcgatcat tgatgaggaa agcagtggaa acaatgccca ggctctcacc
540
tttgtgtatc cttttggtgc cacattgagt gtcatgaaac cagcagtggc ggttctgtct
600
acaggttctg tctgcttccc acttaacaga cccattttgg ctttctatca ctcaaagaac
660
caaggtggga agctggcagt gcttggttca tgtcacatgt tcagtgatca atatttggac
720
aaagaagaaa acagcaaaat catggatgtt gttgtttttcc agtggctcac gacaggagac
780
atccacctaa accagattga tgctgaggac ccagagattt ctgactacat gatgctgccc
840
tacacagcca ccctatcaaa gcggaatcga gagtgtctcc aggagagtga tgagatccca
900
agggactttta ccaccctctt cgacctgtcc atcttccagc tggataccac ctccttccac
960
agcgtcatcg aggctcacga gcagctaaat gtgaaacatg aaccactcca gctcatccag
1020
cctcagtttg agacgccgct gccaaccctt cagcctgcgg ttttcctcc cagtttccgg
1080
gagttaccac ctcctcctct ggagctattt gatttagatg aaacgttctc ctctgagaag
1140
gcacggctgg ctcagattac caataagtgt actgaagaag acctggaatt ttatgtcagg
1200
aagtgtggtg atattcttgg agtaaccagt aaactaccaa aggaccaaca ggatgccaaa
1260
catatccttg agcacgtctt cttccaagtg gtggagttca agaaattgaa ccaggaacat
1320
gacatcgata caagtgaaac agcattccag aacaatttct gaagaccatg cctcttgaag
1380
ctttttctgc ctcctgattc tctctttgta aactattttc aaattgtttt tcaactcctt
1440
atcaaaattg tttatacact ctttcctcca tgagctctgg aaggtatatg catcttctgt
1500
```

aatactcaga taggtataag atttttcaca aaatccttat gtaagataca ttccattttt
1560
aaaaattaaa tgtatggttg catctgtctt tttataccct aaaaaaaaaa aaaaaaaaa
1619

<210> 4806
<211> 438
<212> PRT
<213> Homo sapiens

<400> 4806
Met Glu Lys Glu Leu Arg Ser Thr Ile Leu Phe Asn Ala Tyr Lys Lys
1   5   10   15
Glu Ile Phe Thr Thr Asn Asn Gly Tyr Lys Ser Met Gln Lys Lys Leu
            20   25   30
Arg Ser Asn Trp Lys Ile Gln Ser Leu Lys Asp Glu Ile Thr Ser Glu
        35   40   45
Lys Leu Asn Gly Val Lys Leu Trp Ile Thr Ala Gly Pro Arg Glu Lys
    50   55   60
Phe Thr Ala Ala Glu Phe Glu Ile Leu Lys Lys Tyr Leu Asp Thr Gly
65   70   75   80
Gly Asp Val Leu Val Met Leu Gly Glu Gly Gly Glu Ser Arg Phe Asp
                85   90   95
Thr Asn Ile Asn Phe Leu Leu Glu Glu Tyr Gly Ile Met Val Asn Asn
            100   105   110
Asp Ala Val Val Arg Asn Val Tyr His Lys Tyr Phe His Pro Lys Glu
        115   120   125
Ala Leu Val Ser Ser Gly Val Leu Asn Arg Glu Ile Ser Arg Ala Ala
    130   135   140
Gly Lys Ala Val Leu Ala Ile Ile Asp Glu Glu Ser Ser Gly Asn Asn
145   150   155   160
Ala Gln Ala Leu Thr Phe Val Tyr Pro Phe Gly Ala Thr Leu Ser Val
                165   170   175
Met Lys Pro Ala Val Ala Val Leu Ser Thr Gly Ser Val Cys Phe Pro
            180   185   190
Leu Asn Arg Pro Ile Leu Ala Phe Tyr His Ser Lys Asn Gln Gly Gly
            195   200   205
Lys Leu Ala Val Leu Gly Ser Cys His Met Phe Ser Asp Gln Tyr Leu
    210   215   220
Asp Lys Glu Glu Asn Ser Lys Ile Met Asp Val Val Val Phe Gln Trp
225   230   235   240
Leu Thr Thr Gly Asp Ile His Leu Asn Gln Ile Asp Ala Glu Asp Pro
                245   250   255
Glu Ile Ser Asp Tyr Met Met Leu Pro Tyr Thr Ala Thr Leu Ser Lys
            260   265   270
Arg Asn Arg Glu Cys Leu Gln Glu Ser Asp Glu Ile Pro Arg Asp Phe
        275   280   285
Thr Thr Leu Phe Asp Leu Ser Ile Phe Gln Leu Asp Thr Thr Ser Phe
    290   295   300
His Ser Val Ile Glu Ala His Glu Gln Leu Asn Val Lys His Glu Pro
305   310   315   320
Leu Gln Leu Ile Gln Pro Gln Phe Glu Thr Pro Leu Pro Thr Leu Gln
                325   330   335
Pro Ala Val Phe Pro Pro Ser Phe Arg Glu Leu Pro Pro Pro Pro Leu

```
              340                   345                   350
Glu Leu Phe Asp Leu Asp Glu Thr Phe Ser Ser Glu Lys Ala Arg Leu
          355                   360                   365
Ala Gln Ile Thr Asn Lys Cys Thr Glu Glu Asp Leu Glu Phe Tyr Val
      370                   375                   380
Arg Lys Cys Gly Asp Ile Leu Gly Val Thr Ser Lys Leu Pro Lys Asp
385                   390                   395                   400
Gln Gln Asp Ala Lys His Ile Leu Glu His Val Phe Phe Gln Val Val
              405                   410                   415
Glu Phe Lys Lys Leu Asn Gln Glu His Asp Ile Asp Thr Ser Glu Thr
          420                   425                   430
Ala Phe Gln Asn Asn Phe
          435
```

```
<210> 4807
<211> 1177
<212> DNA
<213> Homo sapiens
```

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<400> 4807
ntgggactct gcccctctac ctcagcacag aatcgccccg ggtcctacta cagaatcaat
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ccttgaacac tgcctccacg tcgccggctc aatctgggcg agaacccaga cttccaccgc
120
agccccgcaa tctgcagacc tcagcggcag cgcaggtggc agacctgcct cctttgcctg
180
tgagtcatgg cagctcccat gaatggccaa gtgtgtgtgg tgactggtgc ctccaggggt
240
attggccgtg gcattgcctt gcagctctgc aaagcaggcg ccacagttta catcactggc
300
cgccatctgg acacccttcg cgttgttgct caggaggcac aatccctcgg gggccaatgt
360
gtgcctgtgg tgtgcgattc aagccaggag agtgaagtgc gaagcctgtt tgagcaagtg
420
gatcgggaac agcaagggcg tctagatgtg ctggtcaaca atgcttatgc aggggtccag
480
acgatcctga acaccaggaa taaggcattc tgggaaaccc ctgcctccat gtgggatgat
540
atcaacaacg tcggactcag aggccactac ttttgctcag tgtatggggc acggctgatg
600
gtaccagctg gccagggggct catcgtggtc atctcctccc caggaagcct gcagtatatg
660
ttcaatgtcc cctatggtgt gggcaaagct gcgtgtgaca agctggctgc tgactgtgcc
720
cacgagctgc ggcgccatgg ggtcagctgt gtgtctctgt ggccggggat tgtgcagaca
780
gaactgctga aggagcatat ggcaaaggag gaggtcctgc aggatcctgt gttgaagcag
840
ttcaaatcag ccttctcatc tgcggaaacc acagaattga gtggcaaatg tgtggtggct
900
ttggcaacag atcccaatat cctgagcctg agtggtaagg tgctgccatc ctgtgacctt
960
gctcgacgct atggccttcg ggatgtggac ggccgccccg tccaagacta tttgtctttg
1020
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agctctgttc tctcacacgt gtccggcctg ggctggctgg cctcctacct gccctccttc
1080
ctccgtgtgc ccaagtggat tattgccctc tacactagca agttctaacc ctcctggtct
1140
gacactacgt ctctgcttgt ctgagaagac aacgcgt
1177

<210> 4808
<211> 313
<212> PRT
<213> Homo sapiens

<400> 4808
Met Ala Ala Pro Met Asn Gly Gln Val Cys Val Val Thr Gly Ala Ser
 1   5   10   15
Arg Gly Ile Gly Arg Gly Ile Ala Leu Gln Leu Cys Lys Ala Gly Ala
                20   25   30
Thr Val Tyr Ile Thr Gly Arg His Leu Asp Thr Leu Arg Val Val Ala
                35   40   45
Gln Glu Ala Gln Ser Leu Gly Gly Gln Cys Val Pro Val Val Cys Asp
        50   55   60
Ser Ser Gln Glu Ser Glu Val Arg Ser Leu Phe Glu Gln Val Asp Arg
65   70   75   80
Glu Gln Gln Gly Arg Leu Asp Val Leu Val Asn Asn Ala Tyr Ala Gly
                85   90   95
Val Gln Thr Ile Leu Asn Thr Arg Asn Lys Ala Phe Trp Glu Thr Pro
                100   105   110
Ala Ser Met Trp Asp Asp Ile Asn Asn Val Gly Leu Arg Gly His Tyr
                115   120   125
Phe Cys Ser Val Tyr Gly Ala Arg Leu Met Val Pro Ala Gly Gln Gly
        130   135   140
Leu Ile Val Val Ile Ser Ser Pro Gly Ser Leu Gln Tyr Met Phe Asn
145   150   155   160
Val Pro Tyr Gly Val Gly Lys Ala Ala Cys Asp Lys Leu Ala Ala Asp
                165   170   175
Cys Ala His Glu Leu Arg Arg His Gly Val Ser Cys Val Ser Leu Trp
                180   185   190
Pro Gly Ile Val Gln Thr Glu Leu Leu Lys Glu His Met Ala Lys Glu
                195   200   205
Glu Val Leu Gln Asp Pro Val Leu Lys Gln Phe Lys Ser Ala Phe Ser
        210   215   220
Ser Ala Glu Thr Thr Glu Leu Ser Gly Lys Cys Val Val Ala Leu Ala
225   230   235   240
Thr Asp Pro Asn Ile Leu Ser Leu Ser Gly Lys Val Leu Pro Ser Cys
                245   250   255
Asp Leu Ala Arg Arg Tyr Gly Leu Arg Asp Val Asp Gly Arg Pro Val
                260   265   270
Gln Asp Tyr Leu Ser Leu Ser Ser Val Leu Ser His Val Ser Gly Leu
        275   280   285
Gly Trp Leu Ala Ser Tyr Leu Pro Ser Phe Leu Arg Val Pro Lys Trp
        290   295   300
Ile Ile Ala Leu Tyr Thr Ser Lys Phe
305   310

<210> 4809
<211> 999
<212> DNA
<213> Homo sapiens

<400> 4809
tccggagagg gccttgtcac attctcctac tccccaagtg aggcctccgt ccttctgttc
60
cccatgtgag gcctccatgg aatgaggagg ggtctgtccc agcagtgcct accctgcttc
120
tcctgtaaga gactgttccc tcctcccaca cttccttgag aagcacttgc ccctccagga
180
taacagcatc actgagcctg gggaacagac agtccctagt ccaagccctg gaggtaagaa
240
aggaggggcc ggccaggatg ctcagtgtgg tcagcatagg ccaggcccct gctaccttga
300
ccctgagggc cagagcacag gcggaactcg gacatagggc cacaggtgac tgcttaatga
360
caaccatgct agctcctggc aatgaggggt caggagcgtg tgtgaataat ggggcacctg
420
acccagggct ggggtacaga gggtgggggt tacaaatggt tcatctgtcg caggacacct
480
ggaggatgag gaaagagccc ccaggcaaac ccattctgtg agcaattccc atctgctgtc
540
tccaaatcct gtctagactc tgaccctgct ggccccttcc agggctccca gctggttgc
600
cacagcggcc tcctaaccaa cacccctgcg gctctggtac cagcccacgc cagacagaga
660
agccagccat cattgctcct gtcttcctcc ccgagaaagt cgaggtcctg gcagggctca
720
gggcctatgt ggccaggccc tggatacttc cctgacctca cctcccctac agcacagccc
780
cttcagctcc tgggggcttt gcacggctgc tcctttcctc ccctctgcc ctcaggccag
840
ccttgtccct gatcactacc ttcttcattt ctgtacctgg ctgacatctg tccttccccg
900
ccaactacaa ggtagacccc gggagggcag ggatggtgca ctgtgttcag ggtgcatttg
960
ccgccagtgg agggaggcac ccaggccact cccgccggc
999

<210> 4810
<211> 120
<212> PRT
<213> Homo sapiens

<400> 4810
Gly Lys Ser Pro Gln Ala Asn Pro Phe Cys Glu Gln Phe Pro Ser Ala
1   5   10   15
Val Ser Lys Ser Cys Leu Asp Ser Asp Pro Ala Gly Pro Phe Gln Gly
            20   25   30
Ser Gln Pro Gly Cys His Ser Gly Leu Leu Thr Asn Thr Pro Ala Ala
        35   40   45
Leu Val Pro Ala His Ala Arg Gln Arg Ser Gln Pro Ser Leu Leu Leu

                              3989

```
        50                      55                      60
Ser Ser Ser Pro Arg Lys Ser Arg Ser Trp Gln Gly Ser Gly Pro Met
65                      70                      75                      80
Trp Pro Gly Pro Gly Tyr Phe Pro Asp Leu Thr Ser Pro Thr Ala Gln
                    85                      90                      95
Pro Leu Gln Leu Leu Gly Ala Leu His Gly Cys Ser Phe Pro Pro Pro
                100                     105                     110
Leu Pro Ser Gly Gln Pro Cys Pro
            115                     120
```

```
<210> 4811
<211> 3207
<212> DNA
<213> Homo sapiens

<400> 4811
nttagtctgc ccccacctct gcacccgccc ccggagggca cccgaggacc atgactatga
60
cagatcctgc ctcgatggcc ccgccacccc gagaagagga ggaagaagag gaggaggagg
120
atgaacccgt cccagaagcc cccagcccca cccaggagcg ccggcagaag cctgttgtgc
180
acccctcggc acctgccccc ctccctaagg actacgcttt taccttcttc gaccccaatg
240
acccggcgtg ccaggagatc ctgtttgacc ctcagaccac catccccgag ctgtttgcca
300
ttgtgcgcca gtgggtgccc caagtccagc acaagataga cgtcatcggc aatgagattc
360
tgcgccgagg ctgccatgtg aacgatcgtg acgggctgac cgacatgaca ctgctccact
420
atgcgtgcaa agctggggcc cacggagtcg gggaccgcg gcagcgtgcg cctctcgcag
480
cagctgctgg cgctgggcga gatgtgacgc tgcgtagcgc tggaccaaca tgaacgcgct
540
tcactacgcg gcctattttg atgtgcccga cctcgtgcgt gtgctgctga agggtgcgag
600
gccgcgagtg gtgaactcca cgtgcagtga cttcaaccac ggctcagccc tgcacatcgc
660
tgcttccagc ctgtgcctgg gcgccgcaaa tgtttgctgg agcacggcgc caaccctgcg
720
ctgaggaatc gaaaaggaca ggtgccggcg gaggtggtcc cagatcctat ggacatgtcc
780
ctggacaagg cagaggcggc actggtggcc aaggagctgc ggacgcttct ggaagaggca
840
gtgccactat cttgcgccct ccccaaggtc acgctaccca actatgacaa cgtcccaggc
900
aatctcatgc ttagcgcact gggcttgcgc ctgggagacc gcgtgctgct ggatggccag
960
aagacgggca cactgcggtt ctgtgggacc acggagtttg ccagcggcag ttgggtgggc
1020
gtggagctgg acgaacctga gggcaagaac gatggcagcg ttgggggcgt tcggtacttc
1080
atctgccctc ccaagcaggg tctctttgcc tccgtgtcca agatctccaa ggcagtggac
1140
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gcacccccct cctctgtcac ctccacaccc ggaccccccc ggatggactt ctcccgtgtc
1200
accggcaaag gccgcaggga acacaaaggc aagaagaaga ccccatcatc cccatctctg
1260
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1320
ggccagaagc aggggatcgt gcgcttctac gggaagacag actttgcccc aggttactgg
1380
tatggcattg agctggacca gcccacaggc aagcatgatg gctctgtctt cggtgtccgg
1440
tacttcactt gccccccgag gcatggggtc ttcgcaccag catcccgtat tcagaggatt
1500
ggcggatcca ctgattcccc cggggacagc gttggagcca aaaaagtgca tcaagtgaca
1560
atgacgcagc ccaaacgcac cttcaccaca gtccggaccc caaaggacat tgcatcagag
1620
aactccattt ccaggttgct gttctgctgc tggttcccct ggatgctgag ggcggagatg
1680
cagtcttaga ggccctggac acctgacaaa gagacagagt ccccactagc atctcctgac
1740
acccgaggag ccctgagtca ccctgagata gagattccca gtaacacatc cagagtagag
1800
accccgtta gccagccctc gatcattgag gccccattat taacagatac tcccataata
1860
accccaaat acagacccca tgtcacccag aaagagattc cctgagtagc accttcaggc
1920
tagtccctat ccccaacccc tcagagcaga ttcccagatt aacagatttc catatcaccc
1980
caaatgatgg tgaccctctc cacataatgc attacaacag aacattcttg aatcacccaa
2040
ccctggatca gaaacctccc cattaacaaa cactgcccct taagtcctct tgaaataaac
2100
ataggtcaca cccccaaagc aaaagagtaa cagacattca tgtcattgtt ccccatttaa
2160
catcagtcct ctcaagatgt cgtgacccca tggtcaccct gaagcccta gattccaacc
2220
cctcaatcag agacttcctt cattaacaaa gacccttgtt cttatccctc aagaagaaac
2280
ccaccataac cagcccactg tcacccctaa tttacagaca ccaaaacagt cctggaagtg
2340
ctaattacag gacccccaa gtcttcctac cctctgcacc ctcaagaaac ccccagtgcc
2400
ttgtatgaag cccaccccac atggcccaca gctcctgtgc tggccagact cccagaaaat
2460
tctctatttt ttaagtaacg acttcccct ttggggacc ccaaaatttg gaggccccat
2520
tctaggactc tggggatccc aaaccctaga gtacacacgt cccaaactcc cctgtgccct
2580
caagtcctac agcccctaga agaccccaat gccgtaactc ctaggacccc caaatcatgg
2640
aatcccaaat ccccagggaa tcccaaattt gaaaatccaa tcccaagtcc ccaggaaacc
2700
caatcatgag gtccttgtgc ctggtatgga ggagactgca gtcaggatat gcattccagg
2760
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3991

ctcccagaca cctcaagccc tattcacagg caccaggaaa ccccacacag gaattcccat
2820
ccctggaaac tggagaattt caatgccccg agtccatggg tttcaagaca ccaaattcca
2880
agagccccag ccctaaggga accccaaatc ctaaagcctc catctctaat aaatggaagg
2940
ccccaaggcc ctgaggggat ctcaaatcct ggaaccccga tttcaatcta cgttctagtc
3000
actggcctca aaggacccca cagcacctgg ccagaccaa cagctcgagg gagaacctga
3060
aggcccaggg ggtccagggc ggacctgggg ccccgaccac caaggacagc tcacgactgc
3120
cccttcactg catgtcccca aactcagcat gactcctgtc ctcttcaata aagacgtttc
3180
tatggccaaa aaaaaaaaaa aaaaaaa
3207

<210> 4812
<211> 306
<212> PRT
<213> Homo sapiens

<400> 4812
Met Asp Met Ser Leu Asp Lys Ala Glu Ala Ala Leu Val Ala Lys Glu
1   5   10   15
Leu Arg Thr Leu Leu Glu Glu Ala Val Pro Leu Ser Cys Ala Leu Pro
            20   25   30
Lys Val Thr Leu Pro Asn Tyr Asp Asn Val Pro Gly Asn Leu Met Leu
        35   40   45
Ser Ala Leu Gly Leu Arg Leu Gly Asp Arg Val Leu Leu Asp Gly Gln
    50   55   60
Lys Thr Gly Thr Leu Arg Phe Cys Gly Thr Thr Glu Phe Ala Ser Gly
65   70   75   80
Ser Trp Val Gly Val Glu Leu Asp Glu Pro Glu Gly Lys Asn Asp Gly
                85   90   95
Ser Val Gly Gly Val Arg Tyr Phe Ile Cys Pro Pro Lys Gln Gly Leu
            100   105   110
Phe Ala Ser Val Ser Lys Ile Ser Lys Ala Val Asp Ala Pro Pro Ser
            115   120   125
Ser Val Thr Ser Thr Pro Gly Pro Pro Arg Met Asp Phe Ser Arg Val
        130   135   140
Thr Gly Lys Gly Arg Arg Glu His Lys Gly Lys Lys Lys Thr Pro Ser
145   150   155   160
Ser Pro Ser Leu Gly Ser Leu Gln Gln Arg Asp Gly Ala Lys Ala Glu
                165   170   175
Val Gly Asp Gln Val Leu Val Ala Gly Gln Lys Gln Gly Ile Val Arg
            180   185   190
Phe Tyr Gly Lys Thr Asp Phe Ala Pro Gly Tyr Trp Tyr Gly Ile Glu
        195   200   205
Leu Asp Gln Pro Thr Gly Lys His Asp Gly Ser Val Phe Gly Val Arg
    210   215   220
Tyr Phe Thr Cys Pro Pro Arg His Gly Val Phe Ala Pro Ala Ser Arg
225   230   235   240
Ile Gln Arg Ile Gly Gly Ser Thr Asp Ser Pro Gly Asp Ser Val Gly

```
                  245                    250                    255
Ala Lys Lys Val His Gln Val Thr Met Thr Gln Pro Lys Arg Thr Phe
            260                    265                    270
Thr Thr Val Arg Thr Pro Lys Asp Ile Ala Ser Glu Asn Ser Ile Ser
        275                    280                    285
Arg Leu Leu Phe Cys Cys Trp Phe Pro Trp Met Leu Arg Ala Glu Met
    290                    295                    300
Gln Ser
305
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<210> 4813
<211> 400
<212> DNA
<213> Homo sapiens

<400> 4813
tggccacact tacccaacag gtaggaggta cagggaggat taaactgaac gcggttcctg
60
gtgggtgtcc tgcacatgct gctgtctcct tggggctctg cacctgccct cctgtctgcc
120
agtgactgtg ggtgggaaag gaggccgtgg tggctgcagc tttcctctgc aaacctccac
180
ctcgcccaca gggcttggct tttcctccag ctgtccagga aaccaccatc atgattgtta
240
aacacagatt tgaacattca cgaagaaact tccagggtga gccaaaccct cttcctcccc
300
actgcacctc caagcagcct tcctgaaagg gaaaagagta cagacctgcc ctctggggac
360
ccctgtgccc tgccatgacc agcctttccc cttcacgcgt
400

<210> 4814
<211> 125
<212> PRT
<213> Homo sapiens

<400> 4814
```
Met Ala Gly His Arg Gly Pro Gln Arg Ala Gly Leu Tyr Ser Phe Pro
 1               5                   10                  15
Phe Gln Glu Gly Cys Leu Glu Val Gln Trp Gly Gly Arg Gly Phe Gly
            20                  25                  30
Ser Pro Trp Lys Phe Leu Arg Glu Cys Ser Asn Leu Cys Leu Thr Ile
        35                  40                  45
Met Met Val Val Ser Trp Thr Ala Gly Gly Lys Ala Lys Pro Cys Gly
    50                  55                  60
Arg Gly Gly Gly Leu Gln Arg Lys Ala Ala Ala Thr Thr Ala Ser Phe
65                  70                  75                  80
Pro Thr His Ser His Trp Gln Thr Gly Gly Gln Val Gln Ser Pro Lys
                85                  90                  95
Glu Thr Ala Ala Cys Ala Gly His Pro Pro Gly Thr Ala Phe Ser Leu
            100                 105                 110
Ile Leu Pro Val Pro Pro Thr Cys Trp Val Ser Val Ala
        115                 120                 125
```

<210> 4815
<211> 528
<212> DNA
<213> Homo sapiens

<400> 4815
nngcgcgcca ggagctctgc attgaaggca ctggggtaaa gtgaatgccg aagacagaag
60
atttggatga tacaccactg actttctttg tttggaatac acgttatgaa ccctttctgg
120
agcatgtcta caagctctgt acgcaaacga tctgaaggtg aagagaagac attaacaggg
180
gacgtgaaaa ccagtcctcc acgaactgca ccaaagaaac agctaccttc tattcccaaa
240
aatgctttgc ccataactaa gcctacatca cctgccccag cagcacagtc aacaaatggc
300
acccatgcct cttacggacc cttctacctg gaatattcac tccttgcaga atttaccttg
360
gttgtgaagc agaagctacc aggcgtctat gtgcagccat cttatcgctc tgcattaatg
420
tagtttggag taatattcat acggcatgga ctttaccaag atggcgtatt taagtttaca
480
gtttacatcc ctgataacta tccagatggt gactgtccac gcttggtg
528

<210> 4816
<211> 105
<212> PRT
<213> Homo sapiens

<400> 4816
Met Asn Pro Phe Trp Ser Met Ser Thr Ser Ser Val Arg Lys Arg Ser
1   5   10   15
Glu Gly Glu Glu Lys Thr Leu Thr Gly Asp Val Lys Thr Ser Pro Pro
                20   25   30
Arg Thr Ala Pro Lys Lys Gln Leu Pro Ser Ile Pro Lys Asn Ala Leu
            35   40   45
Pro Ile Thr Lys Pro Thr Ser Pro Ala Pro Ala Ala Gln Ser Thr Asn
        50   55   60
Gly Thr His Ala Ser Tyr Gly Pro Phe Tyr Leu Glu Tyr Ser Leu Leu
65   70   75   80
Ala Glu Phe Thr Leu Val Val Lys Gln Lys Leu Pro Gly Val Tyr Val
                85   90   95
Gln Pro Ser Tyr Arg Ser Ala Leu Met
                100   105

<210> 4817
<211> 1106
<212> DNA
<213> Homo sapiens

<400> 4817
nntgatcagg aagcgggagc gtagggccac gcctgcggcg ctgctggttg aggctgtgtg
60

ggtgggggac gggccgaggc gatggcggag aagtttgacc acctagagga gcacctggag
120
aagttcgtgg agaacattcg gcagctcggc atcatcgtca gtgacttcca gcccagcagc
180
caggccgggc tcaaccaaaa gctgaatttt attgttactg gcttacagga tattgacaag
240
tgcagacagc agcttcatga tattactgta ccgttagaag tttttgaata tatagatcaa
300
ggtcgaaatc cccagctcta caccaaagag tgcctggaga gggctctagc taaaaatgag
360
caagttaaag gcaagatcga caccatgaag aaatttaaaa gcctgttgat tcaagaactt
420
tctaaagtat ttccggaaga catggctaag tatcgaagca tccggggggga ggatcacccg
480
ccttcttaac cagctcaccc tccctgtgtg aagatccccc gggactgcga tgcggcgtga
540
ggctgggact gcgagtgctg acgccacctt cctgctgagg tgggactggg ccctggacac
600
acccctcagc ccctctgtcc tcattgtttg gcctcatggg accgaggggc tggaggagag
660
gcggagctgt gccccagctg ttccagcagc ttgtctggcg tcaactggct ttcagagtgc
720
tgacccctca tcactgtggg gatcattctc tctgagggca gatgaggcgc aggaaaatag
780
tcttggaaat gttaaatatg atgggtaaat taaaagtttt acaacattct acctaatatt
840
tttctttaa catacttttt ctgttctatt gtattatggt gtccgaaagc taaataacga
900
ctaggaaaaa tttttttaaa aaaagaaaaa tcagtttaat gtgggaagta cttaagtggt
960
attatatttt acattttcaa gtatagtgca taaagaatgt tttaaatgta actgttttca
1020
tggatttcaa ttagacatgc ctataataaa ctaagtatgt ggcttaaaaa aaaaaaaaaa
1080
aaaaaaaaaa aaaaaaaaaa aaaaaa
1106

<210> 4818
<211> 135
<212> PRT
<213> Homo sapiens

<400> 4818
Met Ala Glu Lys Phe Asp His Leu Glu Glu His Leu Glu Lys Phe Val
1   5   10   15
Glu Asn Ile Arg Gln Leu Gly Ile Ile Val Ser Asp Phe Gln Pro Ser
                20   25   30
Ser Gln Ala Gly Leu Asn Gln Lys Leu Asn Phe Ile Val Thr Gly Leu
            35   40   45
Gln Asp Ile Asp Lys Cys Arg Gln Gln Leu His Asp Ile Thr Val Pro
        50   55   60
Leu Glu Val Phe Glu Tyr Ile Asp Gln Gly Arg Asn Pro Gln Leu Tyr
65   70   75   80
Thr Lys Glu Cys Leu Glu Arg Ala Leu Ala Lys Asn Glu Gln Val Lys

```
                    85                    90                    95
Gly Lys Ile Asp Thr Met Lys Lys Phe Lys Ser Leu Leu Ile Gln Glu
                   100                   105                   110
Leu Ser Lys Val Phe Pro Glu Asp Met Ala Lys Tyr Arg Ser Ile Arg
               115                   120                   125
Gly Glu Asp His Pro Pro Ser
           130                   135
```

```
<210> 4819
<211> 1655
<212> DNA
<213> Homo sapiens
```

```
<400> 4819
cggccgcggc ccggactccg cggtgggcga gcgccctgtg aggtgaccat ggaggctggt
60
ggcctcccct tggagctgtg gcgcatgatc ttagcctact tgcaccttcc cgacctgggc
120
cgctgcagcc tggtatgcag ggcctggtat gaactgatcc tcagtctcga cagcacccgc
180
tggcggcagc tgtgtctggg ttgcaccgag tgccgccatc ccaattggcc caaccagcca
240
gatgtggagc ctgagtcttg gagagaagcc ttcaagcagc attaccttgc atccaagaca
300
tggaccaaga atgccttgga cttggagtct tccatctgct tttctctatt ccgccggagg
360
agggaacgac gtaccctgag tgttgggcca ggccgtgagt ttgacagcct gggcagtgcc
420
ttggccatgg ccagcctgta tgaccgaatt gtgctcttcc aggtgtgta cgaagagcaa
480
ggtgaaatca tcttgaaggt gcctgtggag attgtagggc aggggaagtt gggtgaagtg
540
gccctgctgg ccagcattga tcagcactgc tcaaccacac gcctgtgcaa cctcgtcttc
600
acgccagcct ggttctcacc catcatgtat aagacaacat caggtcacgt ccagtttgac
660
aactgcaact ttgagaacgg gcacatccag gtccatggcc cgggtacttg ccaagtgaag
720
ttctgtacct tcaaaaacac ccatatcttc ctgcacaacg tgccctgtg tgtcctggaa
780
aactgtgaat ttgtgggcag tgaaaacaac tctgtgactg ttgagggtca cccatctgcg
840
gataagaact gggcctacaa gtatctacta gggcttatca agtcctcacc cactttctc
900
cccacagagg actctgactt tttaatgtcc ctggacctag agagccggga ccaggcctgg
960
agcccaaaga cctgtgacat tgttatcgag ggcagccaga gccctaccag cccagcttct
1020
agctccccaa agccaggctc caaggctggc tcacaggagg cagaggtggg tagtgatggt
1080
gaaagggtgg cccagacccc ggacagcagc gatggaggcc tgagtcccag cggtgaggat
1140
gaagatgagg accagctgat gtacagacta tcctaccaag tgcagggccc acgccctgta
1200
```

ttgggggggct catttctggg cccacctcta ccaggagcat ccattcagct gcccagctgc
1260
ctagtgctga actcactgca gcaggagctg cagaaggata aggaggccat ggcactggcc
1320
aactccgtgc agggctgcct catccgcaag tgcctcttcc gggacgggaa gggaggcgtc
1380
ttcgtctgct cccacggcag agccaagatg gaaggaaaca tcttccggaa cctgacttac
1440
gcagtgcggt gtatacataa tagcaagatc atcatgctca ggaacgacat ttaccgctgc
1500
cgagcgtcag gcatctttct tcgcttggag ggcggtggct tgattgccgg caacaacatt
1560
taccacaatg cagaggctgg tgtagacatc cggaaaaagt ccaacccact tcagattggt
1620
aaccctcgtg ccgaattctt ggcctcgagg gccaa
1655

<210> 4820
<211> 551
<212> PRT
<213> Homo sapiens

<400> 4820
Arg Pro Arg Pro Gly Leu Arg Gly Gly Arg Ala Pro Cys Glu Val Thr
1   5   10   15
Met Glu Ala Gly Gly Leu Pro Leu Glu Leu Trp Arg Met Ile Leu Ala
            20   25   30
Tyr Leu His Leu Pro Asp Leu Gly Arg Cys Ser Leu Val Cys Arg Ala
        35   40   45
Trp Tyr Glu Leu Ile Leu Ser Leu Asp Ser Thr Arg Trp Arg Gln Leu
    50   55   60
Cys Leu Gly Cys Thr Glu Cys Arg His Pro Asn Trp Pro Asn Gln Pro
65   70   75   80
Asp Val Glu Pro Glu Ser Trp Arg Glu Ala Phe Lys Gln His Tyr Leu
                85   90   95
Ala Ser Lys Thr Trp Thr Lys Asn Ala Leu Asp Leu Glu Ser Ser Ile
            100   105   110
Cys Phe Ser Leu Phe Arg Arg Arg Glu Arg Arg Thr Leu Ser Val
            115   120   125
Gly Pro Gly Arg Glu Phe Asp Ser Leu Gly Ser Ala Leu Ala Met Ala
        130   135   140
Ser Leu Tyr Asp Arg Ile Val Leu Phe Pro Gly Val Tyr Glu Glu Gln
145   150   155   160
Gly Glu Ile Ile Leu Lys Val Pro Val Glu Ile Val Gly Gln Gly Lys
                165   170   175
Leu Gly Glu Val Ala Leu Leu Ala Ser Ile Asp Gln His Cys Ser Thr
            180   185   190
Thr Arg Leu Cys Asn Leu Val Phe Thr Pro Ala Trp Phe Ser Pro Ile
        195   200   205
Met Tyr Lys Thr Thr Ser Gly His Val Gln Phe Asp Asn Cys Asn Phe
        210   215   220
Glu Asn Gly His Ile Gln Val His Gly Pro Gly Thr Cys Gln Val Lys
225   230   235   240
Phe Cys Thr Phe Lys Asn Thr His Ile Phe Leu His Asn Val Pro Leu

```
                    245                    250                    255
Cys Val Leu Glu Asn Cys Glu Phe Val Gly Ser Glu Asn Asn Ser Val
            260                    265                    270
Thr Val Glu Gly His Pro Ser Ala Asp Lys Asn Trp Ala Tyr Lys Tyr
            275                    280                    285
Leu Leu Gly Leu Ile Lys Ser Ser Pro Thr Phe Leu Pro Thr Glu Asp
        290                    295                    300
Ser Asp Phe Leu Met Ser Leu Asp Leu Glu Ser Arg Asp Gln Ala Trp
305                    310                    315                    320
Ser Pro Lys Thr Cys Asp Ile Val Ile Glu Gly Ser Gln Ser Pro Thr
            325                    330                    335
Ser Pro Ala Ser Ser Ser Pro Lys Pro Gly Ser Lys Ala Gly Ser Gln
            340                    345                    350
Glu Ala Glu Val Gly Ser Asp Gly Glu Arg Val Ala Gln Thr Pro Asp
        355                    360                    365
Ser Ser Asp Gly Gly Leu Ser Pro Ser Gly Glu Asp Glu Asp Glu Asp
    370                    375                    380
Gln Leu Met Tyr Arg Leu Ser Tyr Gln Val Gln Gly Pro Arg Pro Val
385                    390                    395                    400
Leu Gly Gly Ser Phe Leu Gly Pro Pro Leu Pro Gly Ala Ser Ile Gln
            405                    410                    415
Leu Pro Ser Cys Leu Val Leu Asn Ser Leu Gln Gln Glu Leu Gln Lys
            420                    425                    430
Asp Lys Glu Ala Met Ala Leu Ala Asn Ser Val Gln Gly Cys Leu Ile
            435                    440                    445
Arg Lys Cys Leu Phe Arg Asp Gly Lys Gly Gly Val Phe Val Cys Ser
    450                    455                    460
His Gly Arg Ala Lys Met Glu Gly Asn Ile Phe Arg Asn Leu Thr Tyr
465                    470                    475                    480
Ala Val Arg Cys Ile His Asn Ser Lys Ile Ile Met Leu Arg Asn Asp
            485                    490                    495
Ile Tyr Arg Cys Arg Ala Ser Gly Ile Phe Leu Arg Leu Glu Gly Gly
            500                    505                    510
Gly Leu Ile Ala Gly Asn Asn Ile Tyr His Asn Ala Glu Ala Gly Val
        515                    520                    525
Asp Ile Arg Lys Lys Ser Asn Pro Leu Gln Ile Gly Asn Pro Arg Ala
    530                    535                    540
Glu Phe Leu Ala Ser Arg Ala
545                    550
```

```
atggtgacat ctccccggga ggagcagcag ctcctggcca gcacctccaa gcccgtggtg
300
aagctcctgc acaaccgcag taacaacaag tactcctaca ccagcacttc agatgacaac
360
ctacttaaga acatcgagct gttcgacaag ctggccctgc gcttccacgg gcggctactc
420
ttcctcaagg atgtcctggg ggacgagatc tgctgctggt ctttctacgg gcagggccgc
480
aaaatcgccg aggtgtgctg cacctccatt gtctatgcta cggagaagaa gcagaccaag
540
gtcagagggg ctccagagcc tatgttgggg gctgggggtg gccac
585
```

```
<210> 4822
<211> 195
<212> PRT
<213> Homo sapiens

<400> 4822
Gly Arg Val Glu Val Leu Thr Asp Ala Gly Gly Trp Val Leu Ile Asp
1               5                   10                  15
Arg Ser Gly Arg His Phe Gly Thr Ile Leu Asn Tyr Leu Arg Asp Gly
            20                  25                  30
Ser Val Pro Leu Pro Glu Ser Thr Arg Glu Leu Gly Glu Leu Leu Gly
        35                  40                  45
Glu Ala Arg Tyr Tyr Leu Val Gln Gly Leu Ile Glu Asp Cys Gln Leu
    50                  55                  60
Ala Leu Gln Gln Lys Arg Glu Thr Leu Ser Pro Leu Cys Leu Ile Pro
65                  70                  75                  80
Met Val Thr Ser Pro Arg Glu Glu Gln Gln Leu Leu Ala Ser Thr Ser
                85                  90                  95
Lys Pro Val Val Lys Leu Leu His Asn Arg Ser Asn Asn Lys Tyr Ser
            100                 105                 110
Tyr Thr Ser Thr Ser Asp Asp Asn Leu Leu Lys Asn Ile Glu Leu Phe
        115                 120                 125
Asp Lys Leu Ala Leu Arg Phe His Gly Arg Leu Leu Phe Leu Lys Asp
    130                 135                 140
Val Leu Gly Asp Glu Ile Cys Cys Trp Ser Phe Tyr Gly Gln Gly Arg
145                 150                 155                 160
Lys Ile Ala Glu Val Cys Cys Thr Ser Ile Val Tyr Ala Thr Glu Lys
                165                 170                 175
Lys Gln Thr Lys Val Arg Gly Ala Pro Glu Pro Met Leu Gly Ala Gly
                180                 185                 190
Gly Gly His
        195
```

```
<210> 4823
<211> 1984
<212> DNA
<213> Homo sapiens

<400> 4823
nggtttttgt tttttgagcc gcaccccgcg gaggcgagga agcagcagcc gcagcacagc
60
```

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agcagctcca atggcgttaa aatggagaat gatgaatcag caaaagaaga gaaatctgac
120
ttaaaggaaa aatctacagg aagtaagaag gccaatagat ttcatcctta ttcaaaagac
180
aagaattcgg gcactggaga aaagaagggt ccaaatcgta acagagtttt cattagcaac
240
atcccatatg acatgaaatg gcaagctatt aaagatctaa tgagagagaa agttggtgag
300
gttacatacg tggagctctt taaggatgcg gaaggaaaat caaggggttg tggtgtggtt
360
gaattcaaag atgaagaatt tgtaaagaaa gccctagaaa ctatgaacaa atatgatctt
420
agtggaagac cccttaatat taaagaggat cctgatggag aaaatgctcg tagggcattg
480
cagcgaacag gaggatcatt tccaggagga cacgtccctg atatgggatc agggttgatg
540
aatttaccac cttccatact caataatcca aacattcctc ctgaagtcat cagtaatttg
600
caggccggta gacttggttc cacaattttt gttgccaatc ttgacttcaa agttggttgg
660
aagaagctaa aggaagtgtt cagcatagct ggaactgtga agcgggcaga tattaaagaa
720
gacaaagatg gcaagagcag aggaatgggc actgtcactt ttgagcaagc aattgaagca
780
gttcaagcaa tttctatgtt caatgggcag ttttttatttg atagacctat gcatgtgaaa
840
atggatgaca agtctgttcc tcatgaagag taccgttcac ctgatggtaa aacaccacaa
900
ttaccacgtg gtcttggagg cattgggatg ggacttggtc cgggtggaca gcctattagt
960
gccagccagt tgaacatagg tggagtaatg ggaaatttag gtccaggtgg tatgggaatg
1020
gatggtccag gttttggagg aatgaataga attggaggag gaatagggtt tggtggtctg
1080
gaagcaatga atagcatggg aggatttgga ggagttggcc gaatgggaga gctgtaccgt
1140
ggtgcgatga ctagtagcat ggagcgagat ttcggacgtg gtgatattgg aataaatcga
1200
gcctttggcg attcctttgg tagacttggc agtgcaatga ttggagggat tacaggaaga
1260
ataggatctt ctaacatggg tccagtagga tctggaataa gtggtggaat gggtagcatg
1320
aacagtgtga ctggaggaat ggggatggga ctggaccgga tgagttccag ctttgataga
1380
atgggaccag gtataggagc tatactggaa aggagcatcg atatggatcg aggattttta
1440
tcgggtccaa tgggaagcgg aatgagagag agaataggct ccaaaggcaa ccagatattt
1500
gtcagaaatc taccttttga cttgacttgg cagaaactaa aagagaaatt cagtcagtgt
1560
ggtcatgtaa tgtttgcaga aataaaaatg gagaatggaa agtcaaaagg ctgtggaaca
1620
gtcagatttg actccccaga atcagctgaa aaagcctgca gaataatgaa tggcataaaa
1680
```

atcagtggca gagaaattga tgttcgcttg gatcgtaatg cataatttca agccatggtt
1740
ggaacattcc tacatctgtt ttgctgaatc tcctagtaaa agtcattttt ttaaagtaat
1800
attgtatgct tacaaaagct gtaaaaatga acttttaaaa ctcccaccag cttttaacag
1860
gtataatggt aaaaatatac tgtaaatttt tggtaatctc aagtttgggt ttttaaagac
1920
agcaagtctg gtcattcagt ttaaatgaat gggtatactg gtttttaatg aaataagcca
1980
tttt
·1984

<210> 4824
<211> 547
<212> PRT
<213> Homo sapiens

<400> 4824
Met Glu Asn Asp Glu Ser Ala Lys Glu Glu Lys Ser Asp Leu Lys Glu
 1   5   10   15
Lys Ser Thr Gly Ser Lys Lys Ala Asn Arg Phe His Pro Tyr Ser Lys
            20   25   30
Asp Lys Asn Ser Gly Thr Gly Glu Lys Lys Gly Pro Asn Arg Asn Arg
         35   40   45
Val Phe Ile Ser Asn Ile Pro Tyr Asp Met Lys Trp Gln Ala Ile Lys
      50   55   60
Asp Leu Met Arg Glu Lys Val Gly Glu Val Thr Tyr Val Glu Leu Phe
65   70   75   80
Lys Asp Ala Glu Gly Lys Ser Arg Gly Cys Gly Val Val Glu Phe Lys
               85   90   95
Asp Glu Glu Phe Val Lys Lys Ala Leu Glu Thr Met Asn Lys Tyr Asp
            100   105   110
Leu Ser Gly Arg Pro Leu Asn Ile Lys Glu Asp Pro Asp Gly Glu Asn
         115   120   125
Ala Arg Arg Ala Leu Gln Arg Thr Gly Gly Ser Phe Pro Gly Gly His
      130   135   140
Val Pro Asp Met Gly Ser Gly Leu Met Asn Leu Pro Pro Ser Ile Leu
145   150   155   160
Asn Asn Pro Asn Ile Pro Pro Glu Val Ile Ser Asn Leu Gln Ala Gly
               165   170   175
Arg Leu Gly Ser Thr Ile Phe Val Ala Asn Leu Asp Phe Lys Val Gly
            180   185   190
Trp Lys Lys Leu Lys Glu Val Phe Ser Ile Ala Gly Thr Val Lys Arg
            195   200   205
Ala Asp Ile Lys Glu Asp Lys Asp Gly Lys Ser Arg Gly Met Gly Thr
      210   215   220
Val Thr Phe Glu Gln Ala Ile Glu Ala Val Gln Ala Ile Ser Met Phe
225   230   235   240
Asn Gly Gln Phe Leu Phe Asp Arg Pro Met His Val Lys Met Asp Asp
               245   250   255
Lys Ser Val Pro His Glu Glu Tyr Arg Ser Pro Asp Gly Lys Thr Pro
            260   265   270
Gln Leu Pro Arg Gly Leu Gly Gly Ile Gly Met Gly Leu Gly Pro Gly

```
                 275                280                285
     Gly Gln Pro Ile Ser Ala Ser Gln Leu Asn Ile Gly Gly Val Met Gly
         290                295                300
     Asn Leu Gly Pro Gly Gly Met Gly Met Asp Gly Pro Gly Phe Gly Gly
     305                310                315                320
     Met Asn Arg Ile Gly Gly Gly Ile Gly Phe Gly Gly Leu Glu Ala Met
                 325                330                335
     Asn Ser Met Gly Gly Phe Gly Gly Val Gly Arg Met Gly Glu Leu Tyr
                 340       .        345                350
     Arg Gly Ala Met Thr Ser Ser Met Glu Arg Asp Phe Gly Arg Gly Asp
         355                360                365
     Ile Gly Ile Asn Arg Ala Phe Gly Asp Ser Phe Gly Arg Leu Gly Ser
         370                375                380
     Ala Met Ile Gly Gly Ile Thr Gly Arg Ile Gly Ser Ser Asn Met Gly
     385                390                395                400
     Pro Val Gly Ser Gly Ile Ser Gly Gly Met Gly Ser Met Asn Ser Val
                 405                410                415
     Thr Gly Gly Met Gly Met Gly Leu Asp Arg Met Ser Ser Ser Phe Asp
                 420                425                430
     Arg Met Gly Pro Gly Ile Gly Ala Ile Leu Glu Arg Ser Ile Asp Met
         435                440                445
     Asp Arg Gly Phe Leu Ser Gly Pro Met Gly Ser Gly Met Arg Glu Arg
         450                455                460
     Ile Gly Ser Lys Gly Asn Gln Ile Phe Val Arg Asn Leu Pro Phe Asp
     465                470                475                480
     Leu Thr Trp Gln Lys Leu Lys Glu Lys Phe Ser Gln Cys Gly His Val
                 485                490                495
     Met Phe Ala Glu Ile Lys Met Glu Asn Gly Lys Ser Lys Gly Cys Gly
                 500                505                .510
     Thr Val Arg Phe Asp Ser Pro Glu Ser Ala Glu Lys Ala Cys Arg Ile
         515                520                525
     Met Asn Gly Ile Lys Ile Ser Gly Arg Glu Ile Asp Val Arg Leu Asp
         530                535                540
     Arg Asn Ala
     545
```

```
<210> 4825
<211> 2380
<212> DNA
<213> Homo sapiens

<400> 4825
nnagagaatt cggcacgggt ggagaagcaa ctgcagcaag ctctggagga gggtaagcag
60
ggccggcggg gcctggggtc gtcgcgacca ggcagtgcag accggcttcg tcagcyccat
120
ccggcccctg gggcbkcagc tgggcgcccg gccggccgct gtctgcagcc ctttggagcg
180
cgtkctgggc tcgcccgckc gctccccggc cggccccctc gcgccctccg cggccagcct
240
ctcgtcgtcc tccacctcca cctccaccac ctattcctcg tcggcccgct tcatgcccgg
300
caccatctgg tcgttctcgc acgnccgccg gctcgggccg ggactggagc ccactctggt
360
```

```
gcaagggcct gggttgtmgt gggtgcaccc ggatggggtg ggcgtccaga tcgacaccat
420
cacgcccgag atccgcgctc tctacaacgt gctggccaaa gtgaagcggg agcgggacga
480
gtacaagcgg aggtgggaag aggagtacac ggtgcggatc cagctgcaag accgtgtaaa
540
tgagctccag gaggaagccc aggaggctga tgcctgccag gaggagctgg cactgaaggt
600
ggaacagttg aaggctgagc tggtggtctt caaggggctc atgagtaaca acctgtcgga
660
gctggacacc aagatccagg agaaagccat gaaggtggat atggacatct gccgccgcat
720
cgacatcacc gccaagctct gcgatgtggc tcagcagcgc aactgcgagg acatgatcca
780
gatgttccag aagaagctgg tcccatccat ggggggggcgg aagcgggagc gcaaggctgc
840
cgtcgaggag gacacctccc tgtcggagag tgaggggccc gccagcccga tggggatgag
900
gaggagagca cagccctcag catcaacgag gagatgcagc gcatgctcaa ccagctgagg
960
gagtatgatt ttgaggacga ctgtgacagc ctgacttggg aggagactga ggagaccctg
1020
ctgctttggg aggatttctc aggctatgcc atggcagctg cagaggccca gggagagcag
1080
gaagatagcc tggagaaggt gattaaagat acggagtccc tgttcaaaac ccgggagaag
1140
gagtatcagg agaccattga ccagatagag ctggagttgg ccacggccaa gaacgacatg
1200
aaccggcacc tgcacgagta catggagatg tgcagcatga gcgcggcct ggacgtgcag
1260
atggagacct gccgccggct catcacccag tctggagacc gaaagtctcc tgctttcact
1320
gcggtcccgc ttagcgaccc gccgccgccg ccaagcgagg ctgaggactc cgatcgcgat
1380
gtctcatctg acagctccat gagatagaga cctgcctccc ccttgcaccc gaggccctcg
1440
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Ala Lys Asn Asp Met Asn Arg His Leu His Glu Tyr Met Glu Met Cys
        35   40   45
Ser Met Lys Arg Gly Leu Asp Val Gln Met Glu Thr Cys Arg Arg Leu
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Ile Thr Gln Ser Gly Asp Arg Lys Ser Pro Ala Phe Thr Ala Val Pro
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Asp Val Ser Ser Asp Ser Ser Met Arg
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<212> PRT
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Asp Pro Leu Glu Leu Gly Pro Cys Gly Asp Gly His Gly Thr Arg Ile
            35   40   45
Met Glu Asp Cys Leu Leu Gly Gly Thr Arg Val Ser Leu Pro Glu Asp
        50   55   60
Leu Leu Glu Asp Pro Glu Ile Phe Phe Asp Val Val Ser Leu Ser Thr
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Trp Gln Glu Val Leu Ser Asp Ser Gln Arg Glu His Leu Gln Gln Phe

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Leu Ala Leu Phe Ser Gly Glu Asn Phe Arg Phe Gly Asn Pro Leu His
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Ile Ala Gln Lys Leu Phe Arg Asp Gly His Phe Asn Pro Glu Val Val
    130                 135                 140
Lys Tyr Arg Gln Leu Cys Phe Lys Ser Gln Tyr Lys Arg Tyr Leu Asn
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Ser Gln Gln Gln Tyr Phe His Arg Leu Leu Lys Gln Ile Leu Ala Ser
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Arg Ser Asp Leu Leu Glu Met Ala Arg Arg Ser Gly Pro Ala Leu Pro
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Phe Arg Gln Lys Arg Pro Ser Pro Ser Arg Thr Pro Glu Glu Arg Glu
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Trp Arg Thr Gln Gln Arg Tyr Leu Lys Val Leu Arg Glu Val Lys Glu
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Glu Cys Gly Asp Thr Ala Leu Ser Ser Asp Glu Glu Asp Leu Ser Ser
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Trp Leu Pro Ser Ser Pro Ala Arg Ser Pro Ser Pro Ala Val Pro Leu
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Arg Val Val Pro Thr Leu Ser Thr Thr Asp Met Lys Thr Ala Asp Lys
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Val Glu Leu Gly Asp Ser Asp Leu Lys Ile Met Leu Lys Lys His His
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Glu Lys Arg Lys His Gln Pro Asp His Pro Asp Leu Leu Thr Gly Asp
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Ser Leu Ala Ala Leu Tyr Asp Leu Ala Val Leu Lys Lys Lys Val Lys
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Glu Lys Glu Glu Lys Lys Lys Lys Lys Ile Lys Thr Ile Lys Ser Glu
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Ala Glu Asp Leu Ala Glu Pro Leu Ser Ser Thr Glu Gly Val Ala Pro
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Leu Ser Gln Ala Pro Ser Pro Leu Ala Ile Pro Ala Ile Lys Glu Glu
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Pro Leu Glu Asp Leu Lys Pro Cys Leu Gly Ile Asn Glu Ile Ser Ser
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Ser Phe Phe Ser Leu Leu Leu Glu Ile Leu Leu Leu Glu Ser Gln Ala
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Ser Leu Pro Met Leu Glu Glu Arg Val Leu Asp Trp Gln Ser Ser Pro
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Ala Ser Ser Leu Asn Ser Trp Phe Ser Ala Ala Pro Asn Trp Ala Glu
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Leu Val Leu Pro Ala Leu Gln Tyr Leu Ala Gly Glu Ser Arg Ala Val
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Pro Ser Ser Phe Ser Pro Phe Val Glu Phe Lys Glu Lys Thr Gln Gln
465                 470                 475                 480
Trp Lys Leu Leu Gly Gln Ser Gln Asp Asn Glu Lys Glu Leu Ala Ala
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Leu Phe Gln Leu Trp Leu Glu Thr Lys Asp Gln Ala Phe Cys Lys Gln
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Glu Asn Glu Asp Ser Ser Asp Ala Thr Thr Pro Val Pro Arg Val Arg
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4009

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Arg Ser Asp Arg Pro Ala Tyr Val Thr Ile Leu Ser Leu Val Arg Asp
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Ala Ala Ala Arg Leu Pro Asn Gly Glu Gly Thr Arg Ala Glu Ile Cys
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Glu Leu Leu Lys Asp Ser Gln Phe Leu Ala Pro Asp Val Thr Ser Thr
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Lys Asp Pro Cys Val Lys Tyr Asp Ile Gly Arg Lys Leu Trp Ile Tyr
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Ala Thr Gln Thr Lys Val Val Pro Gln Thr Val Met Ala Thr Val Pro
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Gln Thr Gly Leu Thr Val Thr Ser Leu Pro Ala Thr Ala Ser Pro Val
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<400> 4829

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actacactga atgtggctca ggcttattat gcccgtgatg ctctggctaa aaacctctac
1140
agcaggttgt tttcatggtt ggtaaatcga atcaatgaaa gcattaaggc acaaacaaaa
1200
gtgagaaaga aggtcatggg tgttctggac atttatggct ttgagatttt cgaggacaac
1260
agctttgagc agttcattat taattattgt aacgaaaagc tgcaacaaat cttcattgaa
1320
cttactctta agaagagca ggaggagtat atacgggagg atatagaatg gactcacatt
1380
gactacttca ataatgctat catttgtgac ctaatagaaa ataacacaaa tggaatcctg
1440
gccatgttgg atgaagagtg cctcagacct ggcacagtca ctgatgagac cttcttagaa
1500
aagctgaacc aagtatgtgc cacccaccag cattttgaaa gcaggatgag caagtgctct
1560
cggttcctca atgacacgtc tctgcctcac agctgcttca ggatc
1605
```

<210> 4830
<211> 512
<212> PRT
<213> Homo sapiens

<400> 4830

```
Met Ala Lys Met Glu Val Lys Thr Ser Leu Leu Asp Asn Met Ile Gly
 1               5                   10                  15
Val Gly Asp Met Val Leu Leu Glu Pro Leu Asn Glu Glu Thr Phe Ile
                20                  25                  30
Asn Asn Leu Lys Lys Arg Phe Asp His Ser Glu Ile Tyr Thr Tyr Ile
                35                  40                  45
Gly Ser Val Val Ile Ser Val Asn Pro Tyr Arg Ser Leu Pro Ile Tyr
        50                  55                  60
Ser Pro Glu Lys Val Glu Glu Tyr Arg Asn Arg Asn Phe Tyr Glu Leu
65                  70                  75                  80
Ser Pro His Ile Phe Ala Leu Ser Asp Glu Ala Tyr Arg Ser Leu Arg
                85                  90                  95
Asp Gln Asp Lys Asp Gln Cys Ile Leu Ile Thr Gly Glu Ser Gly Ala
                100                 105                 110
Gly Lys Thr Glu Ala Ser Lys Leu Val Met Ser Tyr Val Ala Ala Val
                115                 120                 125
Cys Gly Lys Gly Ala Glu Val Asn Gln Val Lys Glu Gln Leu Leu Gln
        130                 135                 140
Ser Asn Pro Val Leu Glu Ala Phe Gly Asn Ala Lys Thr Val Arg Asn
145                 150                 155                 160
Asp Asn Ser Ser Arg Phe Gly Lys Tyr Met Asp Ile Glu Phe Asp Phe
                165                 170                 175
Lys Gly Asp Pro Leu Gly Gly Val Ile Ser Asn Tyr Leu Leu Glu Lys
                180                 185                 190
Ser Arg Val Val Lys Gln Pro Arg Gly Glu Arg Asn Phe His Val Phe
                195                 200                 205
Tyr Gln Leu Leu Ser Gly Ala Ser Glu Glu Leu Leu Asn Lys Leu Lys
        210                 215                 220
Leu Glu Arg Asp Phe Ser Arg Tyr Asn Tyr Leu Ser Leu Asp Ser Ala
225                 230                 235                 240
Lys Val Asn Gly Val Asp Asp Ala Ala Asn Phe Arg Thr Val Arg Asn
                245                 250                 255
Ala Met Gln Ile Val Gly Phe Met Asp His Glu Ala Glu Ser Val Leu
                260                 265                 270
Ala Val Val Ala Ala Val Leu Lys Leu Gly Asn Ile Glu Phe Lys Pro
        275                 280                 285
Glu Ser Arg Val Asn Gly Leu Asp Glu Ser Lys Ile Lys Asp Lys Asn
        290                 295                 300
Glu Leu Lys Glu Ile Cys Glu Leu Thr Gly Ile Asp Gln Ser Val Leu
305                 310                 315                 320
Glu Arg Ala Phe Ser Phe Arg Thr Val Glu Ala Lys Gln Glu Lys Val
                325                 330                 335
Ser Thr Thr Leu Asn Val Ala Gln Ala Tyr Tyr Ala Arg Asp Ala Leu
                340                 345                 350
Ala Lys Asn Leu Tyr Ser Arg Leu Phe Ser Trp Leu Val Asn Arg Ile
        355                 360                 365
Asn Glu Ser Ile Lys Ala Gln Thr Lys Val Arg Lys Lys Val Met Gly
```

```
        370                      375                      380
Val Leu Asp Ile Tyr Gly Phe Glu Ile Phe Glu Asp Asn Ser Phe Glu
385                      390                      395                      400
Gln Phe Ile Ile Asn Tyr Cys Asn Glu Lys Leu Gln Gln Ile Phe Ile
                405                      410                      415
Glu Leu Thr Leu Lys Glu Glu Gln Glu Glu Tyr Ile Arg Glu Asp Ile
                420                      425                      430
Glu Trp Thr His Ile Asp Tyr Phe Asn Asn Ala Ile Ile Cys Asp Leu
        435                      440                      445
Ile Glu Asn Asn Thr Asn Gly Ile Leu Ala Met Leu Asp Glu Glu Cys
    450                      455                      460
Leu Arg Pro Gly Thr Val Thr Asp Glu Thr Phe Leu Glu Lys Leu Asn
465                      470                      475                      480
Gln Val Cys Ala Thr His Gln His Phe Glu Ser Arg Met Ser Lys Cys
                485                      490                      495
Ser Arg Phe Leu Asn Asp Thr Ser Leu Pro His Ser Cys Phe Arg Ile
                500                      505                      510
```

<210> 4831
<211> 578
<212> DNA
<213> Homo sapiens

<400> 4831
cggacggtgg ccctcaaagg cccagtcacc aatgccgcca tcctgctggc gcccgtcagc
60
atgctgagct cagacttcag gcccagcctg ccgctgcccc acttcaacaa gcacctgctg
120
ggcgccgagc acggggacga gccgcgccac ggggggcctca ctctgcgcct gggcctccac
180
cagcagagcg tgctcggcgg ccaggaccag ctgcgcgtcc gtgtgacgga gctggaggac
240
gaggtgcgca acctgcgcaa gatcaatcgg gacctgttcg acttctccac gcgcttcatc
300
acgcggccgg ccaagtgagg cccggagacc ccggcccgag gcgcccaggc ctgagcccca
360
tgcctcccag caaccagggc ccgcgggtgt ggcccccacc agcccaggcc tggactctcc
420
tcagttctgt gtcgtgttcg ggttttttcct ctgtgactgg ccgtcttgg tgtctcgtgg
480
cacgcgtcac agtggtgcta gtctgttttt aacaaagag gatgaaaagc caaaaaaaaa
540
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaa
578

<210> 4832
<211> 105
<212> PRT
<213> Homo sapiens

<400> 4832
```
Arg Thr Val Ala Leu Lys Gly Pro Val Thr Asn Ala Ala Ile Leu Leu
 1               5                      10                      15
Ala Pro Val Ser Met Leu Ser Ser Asp Phe Arg Pro Ser Leu Pro Leu
```

```
                20                      25                      30
Pro His Phe Asn Lys His Leu Leu Gly Ala Glu His Gly Asp Glu Pro
         35                      40                      45
Arg His Gly Gly Leu Thr Leu Arg Leu Gly Leu His Gln Gln Ser Val
    50                      55                      60
Leu Gly Gly Gln Asp Gln Leu Arg Val Arg Val Thr Glu Leu Glu Asp
65                      70                      75                      80
Glu Val Arg Asn Leu Arg Lys Ile Asn Arg Asp Leu Phe Asp Phe Ser
             85                      90                      95
Thr Arg Phe Ile Thr Arg Pro Ala Lys
             100                     105
```

```
<210> 4833
<211> 872
<212> DNA
<213> Homo sapiens

<400> 4833
nnctggacag aatttttaaa agcaatgaag ccagttcctt ggatatatcc acgggctttg
60
ctttgagaag gaactgagta ggcagtgaga agagtcgagt gaagcctggc ccgtgagtgc
120
ctcaacaact gagatgaacg tcgactcgct tgcaggcaag ttgtcactca gcagcgatct
180
gaactatatc ctgggttcca gaaaaggcag aggttcttac cgaaagcagg ggaggaagcc
240
gcagcccaag gaggtcgtca cttgccggga aggtggctcg ggccaggctg cactcaaaac
300
ccgtgctctg tccacactgc tacggggcca gagccaagga agcttccact tcttccccca
360
gacagcccca acagcggcta ccccaaggag ccagcagcct tgtgtcctgg gatccccagc
420
ccctgcagaa tgacccacca ggatctgagc atcacagcca aactcatcaa tggaggtgta
480
gcagggctcg tgggggtgac ctgcgtgttc cccatcgact tggccaagac tcgcctgcag
540
aaccagcatg ggaaagccat gtacaaagga atgatcgact gcctgatgaa gacggctcgg
600
gcggagggct tcttcggcat gtaccgaggg gctgcagtga acctcactct ggtcactcca
660
gagaaggcca tcaagctggc ggccaacgac tttttccggc ggctgctcat ggaagatggg
720
atgcagcgga acctgaagat ggagatgctt gccgggtgtg gggctgggat gtgccaggtc
780
gtggtgacct gtcccatgga aatgctcaag attcagctgc aggcatgctg gacgcctggc
840
cgtccatcat cagggctcgg cctcagcacc ct
872
```

```
<210> 4834
<211> 147
<212> PRT
<213> Homo sapiens
```

<400> 4834
Met Thr His Gln Asp Leu Ser Ile Thr Ala Lys Leu Ile Asn Gly Gly
  1   5   10   15
Val Ala Gly Leu Val Gly Val Thr Cys Val Phe Pro Ile Asp Leu Ala
             20   25   30
Lys Thr Arg Leu Gln Asn Gln His Gly Lys Ala Met Tyr Lys Gly Met
         35   40   45
Ile Asp Cys Leu Met Lys Thr Ala Arg Ala Glu Gly Phe Phe Gly Met
     50   55   60
Tyr Arg Gly Ala Ala Val Asn Leu Thr Leu Val Thr Pro Glu Lys Ala
65   70   75   80
Ile Lys Leu Ala Ala Asn Asp Phe Phe Arg Arg Leu Leu Met Glu Asp
             85   90   95
Gly Met Gln Arg Asn Leu Lys Met Glu Met Leu Ala Gly Cys Gly Ala
         100   105   110
Gly Met Cys Gln Val Val Val Thr Cys Pro Met Glu Met Leu Lys Ile
     115   120   125
Gln Leu Gln Ala Cys Trp Thr Pro Gly Arg Pro Ser Ser Gly Leu Gly
     130   135   140
Leu Ser Thr
145

<210> 4835
<211> 1846
<212> DNA
<213> Homo sapiens

<400> 4835
nctcatttcc gaagtgccct gacagcccac cctgtgcgtg accctgtgca catgtaccag
60
ctgcacaaag ctttcgcccg agctgaactg gaacgcacgt accaggagat ccaggagtta
120
cagtgggaga tccagaatac cagccatctg gccgttgatg gggaccgggc agctgcttgg
180
cccgtgggta ttccagcacc atcccgcccg gcctcccgct ttgaggtgct gcgctgggac
240
tacttcacgg agcagcacgc tttctcctgc gccgatggct caccccgctg cccactgcgt
300
ggggctgacc gggctgatgt ggccgatgtt ctggggacag ctctagagga gctgaaccgc
360
cgctaccacc cggccttgcg gctccagaag cagcagctgg tgaatggcta ccgacgcttt
420
gatccggccc ggggtatgga atacacgctg gacttgcagc tggaggcact gacccccag
480
ggaggccgcc ggcccctcac tcgccgagtg cagctgctcc ggccgctgag ccgcgtggag
540
atcttgcctg tgccctatgt cactgaggcc tcacgtctca ctgtgctgct gcctctagct
600
gcggctgagc gtgacctggc ccctggcttc ttggaggcct ttgccactgc agcactggag
660
cctggtgatg ctgcggcagc cctgaccctg ctgctactgt atgagccgcg ccaggcccag
720
cgcgtggccc atgcagatgt cttcgcacct gtcaaggccc acgtggcaga gctggagcgg
780

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cgtttccccg gtgcccgggt gccatggctc agtgtgcaga cagccgcacc ctcaccactg
840
cgcctcatgg atctactctc caagaagcac ccgctggaca cactgttcct gctggccggg
900
ccagacacgg tgctcacgcc tgacttcctg aaccgctgcc gcatgcatgc catctccggc
960
tggcaggcct tctttcccat gcatttccaa gccttccacc cagctgtggc cccaccacaa
1020
gggcctgggc ccccagagct ggggccgtga cactggccgc tttgatcgcc aggcagccag
1080
cgaggcctgc ttctacaact ccgactacgt ggcagcccgt gggcgcctgg cgcagctca
1140
gaacaagaag aggagctgct ggagagcctg gatgtgtacg agctgttcct ccacttctcc
1200
agtctgcatg tgctgcgggc ggtggagcgg cgctgctgca gccgctaccg ggcccagacg
1260
tgcagcgcga ggctcagtga ggacctgtac caccgctgcc tccagagcgt gcttgagggc
1320
ctcggctccc gaacccagct ggccatgcta ctctttgaac aggagcaggg caacagcacc
1380
tgaccccacc ctgtccccgt gggcccgtgg cattggccac accccacccc acttctcccc
1440
caaaaccaga gccacctgcc agcctcgctg ggcagggctg gccgtagcca gaccccaagc
1500
tggcccactg gtcccctctc tggctctgtg ggtccctggg ctctggacaa gcactggggg
1560
acgtgccccc agagccaccc acttctcatc ccaaacccag tttccctgcc ccctgacgct
1620
gctgattcgg gctgtggcct ccacgtattt atgcagtaca gtctgcctga cgccagccct
1680
gcctctgggc cctgggggct gggctgtaga agagttgttg gggaaggagg gagctgagga
1740
gggggcatct cccaacttct ccctttgga ccctgccgaa gctccctgcc tttaataaac
1800
tggccaagtg tggaaaaaaa aaaaaaaaaa aaaaaaaaa aaaaa
1846


<210> 4836
<211> 349
<212> PRT
<213> Homo sapiens

<400> 4836
Xaa His Phe Arg Ser Ala Leu Thr Ala His Pro Val Arg Asp Pro Val
1               5                   10                  15
His Met Tyr Gln Leu His Lys Ala Phe Ala Arg Ala Glu Leu Glu Arg
            20                  25                  30
Thr Tyr Gln Glu Ile Gln Glu Leu Gln Trp Glu Ile Gln Asn Thr Ser
        35                  40                  45
His Leu Ala Val Asp Gly Asp Arg Ala Ala Ala Trp Pro Val Gly Ile
    50                  55                  60
Pro Ala Pro Ser Arg Pro Ala Ser Arg Phe Glu Val Leu Arg Trp Asp
65                  70                  75                  80
Tyr Phe Thr Glu Gln His Ala Phe Ser Cys Ala Asp Gly Ser Pro Arg
```

```
                      85                    90                    95
Cys Pro Leu Arg Gly Ala Asp Arg Ala Asp Val Ala Asp Val Leu Gly
                100                   105                   110
Thr Ala Leu Glu Glu Leu Asn Arg Arg Tyr His Pro Ala Leu Arg Leu
            115                   120                   125
Gln Lys Gln Gln Leu Val Asn Gly Tyr Arg Arg Phe Asp Pro Ala Arg
        130                   135                   140
Gly Met Glu Tyr Thr Leu Asp Leu Gln Leu Glu Ala Leu Thr Pro Gln
145                   150                   155                   160
Gly Gly Arg Arg Pro Leu Thr Arg Arg Val Gln Leu Leu Arg Pro Leu
                165                   170                   175
Ser Arg Val Glu Ile Leu Pro Val Pro Tyr Val Thr Glu Ala Ser Arg
                180                   185                   190
Leu Thr Val Leu Leu Pro Leu Ala Ala Ala Glu Arg Asp Leu Ala Pro
            195                   200                   205
Gly Phe Leu Glu Ala Phe Ala Thr Ala Ala Leu Glu Pro Gly Asp Ala
        210                   215                   220
Ala Ala Ala Leu Thr Leu Leu Leu Leu Tyr Glu Pro Arg Gln Ala Gln
225                   230                   235                   240
Arg Val Ala His Ala Asp Val Phe Ala Pro Val Lys Ala His Val Ala
                245                   250                   255
Glu Leu Glu Arg Arg Phe Pro Gly Ala Arg Val Pro Trp Leu Ser Val
                260                   265                   270
Gln Thr Ala Ala Pro Ser Pro Leu Arg Leu Met Asp Leu Leu Ser Lys
            275                   280                   285
Lys His Pro Leu Asp Thr Leu Phe Leu Leu Ala Gly Pro Asp Thr Val
        290                   295                   300
Leu Thr Pro Asp Phe Leu Asn Arg Cys Arg Met His Ala Ile Ser Gly
305                   310                   315                   320
Trp Gln Ala Phe Phe Pro Met His Phe Gln Ala Phe His Pro Ala Val
                325                   330                   335
Ala Pro Pro Gln Gly Pro Gly Pro Pro Glu Leu Gly Pro
            340                   345
```

```
<210> 4837
<211> 906
<212> DNA
<213> Homo sapiens

<400> 4837
naggggagg aggaggaggt ggtggcagcc tttgggaaga aggagtccca ggaggaagag
60
gaggaagaag acagtgacga aggggaaaga acaattgaaa ctgcaaaagg gattaatgga
120
actgtaaatt atgatagtgt caattctgac aactctaagc caaagatatt taaaagtcaa
180
atagagaaca taaatttgac caatggcagc aatgggagga acacagagtc cccagctgcc
240
attcaccctt gtggaaatcc tacagtgatt gaggacgctt ggacaagat taaaagcaat
300
gaccctgaca ccacagaagt caatttgaac aacattgaga acatcacaac acagaccctt
360
acccgctttg ctgaagccct caaggacaac actgtggtga agacgttcag tctggccaac
420
```

```
acgcatgccg acgacagtgc agccatggcc attgcagaga tgctcaaagt caatgagcac
480
atcaccaacg taaacgtcga gtccaacttc ataacgggaa aggggatcct ggccatcatg
540
agagctctcc agcacaacac ggtgctcacg gagctgcgtt tccataacca gaggcacatc
600
atgggcagcc aggtggaaat ggagattgtc aagctgctga aggagaacac gacgctgctg
660
aggctgggat accattttga actcccagga ccaagaatga gcatgacgag catttgaca
720
agaaatatgg ataaacagag gcaaaaacgt ttgcaggagc aaaaacagca ggagggatac
780
gatggaggac ccaatcttag gaccaaagtc tggcaaagag gaacacctag cccttcccct
840
tatgtatctc ccaggcactc accgtggtca tccccaaaac tcccctacgg agagacgaca
900
acgcgt
906


<210> 4838
<211> 302
<212> PRT
<213> Homo sapiens

<400> 4838
Xaa Gly Glu Glu Glu Glu Val Val Ala Ala Phe Gly Lys Lys Glu Ser
1               5                   10                  15
Gln Glu Glu Glu Glu Glu Glu Asp Ser Asp Glu Gly Glu Arg Thr Ile
            20                  25                  30
Glu Thr Ala Lys Gly Ile Asn Gly Thr Val Asn Tyr Asp Ser Val Asn
        35                  40                  45
Ser Asp Asn Ser Lys Pro Lys Ile Phe Lys Ser Gln Ile Glu Asn Ile
    50                  55                  60
Asn Leu Thr Asn Gly Ser Asn Gly Arg Asn Thr Glu Ser Pro Ala Ala
65                  70                  75                  80
Ile His Pro Cys Gly Asn Pro Thr Val Ile Glu Asp Ala Leu Asp Lys
                85                  90                  95
Ile Lys Ser Asn Asp Pro Asp Thr Thr Glu Val Asn Leu Asn Asn Ile
            100                 105                 110
Glu Asn Ile Thr Thr Gln Thr Leu Thr Arg Phe Ala Glu Ala Leu Lys
            115                 120                 125
Asp Asn Thr Val Val Lys Thr Phe Ser Leu Ala Asn Thr His Ala Asp
        130                 135                 140
Asp Ser Ala Ala Met Ala Ile Ala Glu Met Leu Lys Val Asn Glu His
145                 150                 155                 160
Ile Thr Asn Val Asn Val Glu Ser Asn Phe Ile Thr Gly Lys Gly Ile
                165                 170                 175
Leu Ala Ile Met Arg Ala Leu Gln His Asn Thr Val Leu Thr Glu Leu
            180                 185                 190
Arg Phe His Asn Gln Arg His Ile Met Gly Ser Gln Val Glu Met Glu
        195                 200                 205
Ile Val Lys Leu Leu Lys Glu Asn Thr Thr Leu Leu Arg Leu Gly Tyr
    210                 215                 220
His Phe Glu Leu Pro Gly Pro Arg Met Ser Met Thr Ser Ile Leu Thr
```

```
225                  230                  235                       240
Arg Asn Met Asp Lys Gln Arg Gln Lys Arg Leu Gln Glu Gln Lys Gln
                245                      250                  255
Gln Glu Gly Tyr Asp Gly Gly Pro Asn Leu Arg Thr Lys Val Trp Gln
                260                      265                  270
Arg Gly Thr Pro Ser Pro Ser Pro Tyr Val Ser Pro Arg His Ser Pro
            275                      280                  285
Trp Ser Ser Pro Lys Leu Pro Tyr Gly Glu Thr Thr Thr Arg
        290                      295                  300
```

```
<210> 4839
<211> 1313
<212> DNA
<213> Homo sapiens
```

```
<400> 4839
nnggcgctca gggcccccac aagaggtcga gggaatgttg tgggctgggg cacaccagca
60
cggcagaaac tggagaaagc gagagacgtc gccagggacc cagggacctc tccctccagt
120
tccccgggcc cgcccggccc tgatggccac tcacgctata gcgcccactc tgtcctgggc
180
catcccgcgc cagcagtgta gcccccagcc cgggcgcctg aatgctctcc ctccggatcg
240
ctgctcgggt ccccactttg gcgaccgntg ccccgagtc ctgcttcccc ggggcctgct
300
ctgtatcagg cgcctgcgcc ttcaagggta cccggcccgc ctgccctccc aagagccga
360
gtttgcgctc ctcccggaat cgtttgagag aaggacaaac ttttggcagg atggaaatct
420
agatgagcct gtccggagca gaacacccct gattagccag gcccaccgcc atccacatct
480
gctcggcaaa gaaggaaggc agcttgttcc agaccttggt gagcagctgc agactgcctg
540
cctagaacag cctccttact ccagcctggc agggaaggaa ggaacctgac ttgcttcgca
600
ggatctggaa gctcagccgg cagagctgag agccgcagtt gcatcctgga gcctgatgct
660
agaagcagct tccgtctttg ggttcttgct gcctcggcct ctgctctgtt cagtttgctg
720
ttgtgttttt ctcccccatg ttggggtggt ggggtacagg gaaataaaat gctttctccc
780
aggcccctaa tccttcccca tgcctccatc agcctcaaag ctgctgacag tcatgaactg
840
caccttccag ccctgcccat aagctactca aagcaaattc aaattctctt ctggccaggg
900
ggaagggcag atgctccctc cttcctcaag cctccctggc tcattgatcc attttgaggg
960
catttggggg tcaaagttga gaccagattg cttcagtttg tataaaatta gcatttctta
1020
tcacaccaag gccacacctg ttctctggcc tcacaaacca gtgaggatgt aaaggtttgt
1080
tgaggtggag gaacagaagt gaaatgagca atctgctcca tttagaagtc agtcgcttcg
1140
```

gctgttcatt ccactaatat ttatctagta cctattctgt gccaagcatt gtctctacct
1200
cagtttgcca caaatatgaa aaaaaaaaaa ttcttggaac tgtgaggctt caatgtgttg
1260
tggaccaata tacaaataaa ccaatggaaa agaaaaaaaa aaaaaaaaa aaa
1313

<210> 4840
<211> 66
<212> PRT
<213> Homo sapiens

<400> 4840
Xaa Ala Leu Arg Ala Pro Thr Arg Gly Arg Gly Asn Val Val Gly Trp
 1   5   10   15
Gly Thr Pro Ala Arg Gln Lys Leu Glu Lys Ala Arg Asp Val Ala Arg
               20   25   30
Asp Pro Gly Thr Ser Pro Ser Ser Ser Pro Gly Pro Pro Gly Pro Asp
           35   40   45
Gly His Ser Arg Tyr Ser Ala His Ser Val Leu Gly His Pro Ala Pro
     50   55   60
Ala Val
65

<210> 4841
<211> 558
<212> DNA
<213> Homo sapiens

<400> 4841
acgcgtgcga gtgtgcggac tcagtggacg acggcggcgg cggcgaaagc ggatgaagac
60
cccggagcca acttgtttcc gccgccgctg ccccgacccc ggatctgcat gtggaagtac
120
ctggacgtcc attccatgca ccagctggag aagaccacca atgctgagat gagggaggtg
180
ctggctgagc tgctggagct agggtgtcct gagcagagcc tgagggacgc catcaccctg
240
gacctcttct gccacgcgct cattttctgc cgccagcagg gcttctcact ggagcagacg
300
tcagcggctt gtgccctgct ccaggatctt cacaaggctt gtattggcca catccacgtc
360
ctccgagcct acatcaagac ccaagtgaac aaagagctgg agcagctcca ggggctggtg
420
gaggagcgct caaggccagc gaggaaaggc tcagcagcaa gttgactgca ctagagcggc
480
ccttccagct actccgggta aaggcaagag caagaccaag tgacccccaa cattttcccc
540
aataaaggtc tgggccag
558

<210> 4842
<211> 118
<212> PRT

<213> Homo sapiens

<400> 4842
Met Trp Lys Tyr Leu Asp Val His Ser Met His Gln Leu Glu Lys Thr
1   5   10   15
Thr Asn Ala Glu Met Arg Glu Val Leu Ala Glu Leu Leu Glu Leu Gly
            20   25   30
Cys Pro Glu Gln Ser Leu Arg Asp Ala Ile Thr Leu Asp Leu Phe Cys
        35   40   45
His Ala Leu Ile Phe Cys Arg Gln Gln Gly Phe Ser Leu Glu Gln Thr
    50   55   60
Ser Ala Ala Cys Ala Leu Leu Gln Asp Leu His Lys Ala Cys Ile Gly
65   70   75   80
His Ile His Val Leu Arg Ala Tyr Ile Lys Thr Gln Val Asn Lys Glu
                85   90   95
Leu Glu Gln Leu Gln Gly Leu Val Glu Glu Arg Ser Arg Pro Ala Arg
            100   105   110
Lys Gly Ser Ala Ala Ser
        115

<210> 4843
<211> 6403
<212> DNA
<213> Homo sapiens

<400> 4843
ggcacgagct gtaggagcag gggcctagca agcgcccagc ggagcgaccc ctgcctggcc
60
gtggctagca tggcccctac gctgttccag aagctcttca gcaagaggac cgggctgggc
120
gcgccggcc gcgacgcccg ggacccagat tgcgggttca gttggccttt accagagttt
180
gatccaagcc agattcgact gattgtatat caagactgtg aaagacgagg gagaaatgtt
240
ttgtttgact ccagtgttaa gagaagaaat gaggacatat cagtatcgga cttaaatact
300
atttattctt atcttcatgg aatggaaata ttatcaaatc tcagggaaca tcagcttaga
360
ttaatgtctg caagagcacg ctatgagaga tacagtggca atcaggttct cttttgttca
420
gaaacgattg ccagatgttg gtatatccta ctttctggat ctgtgcttgt gaaaggctcc
480
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Pro Asp Cys Gly Phe Ser Trp Pro Leu Pro Glu Phe Asp Pro Ser Gln
    50                  55                  60
Ile Arg Leu Ile Val Tyr Gln Asp Cys Glu Arg Arg Gly Arg Asn Val
65                  70                  75                  80
Leu Phe Asp Ser Ser Val Lys Arg Arg Asn Glu Asp Ile Ser Val Ser
                85                  90                  95
Asp Leu Asn Thr Ile Tyr Ser Tyr Leu His Gly Met Glu Ile Leu Ser
            100                 105                 110
Asn Leu Arg Glu His Gln Leu Arg Leu Met Ser Ala Arg Ala Arg Tyr
        115                 120                 125
Glu Arg Tyr Ser Gly Asn Gln Val Leu Phe Cys Ser Glu Thr Ile Ala
    130                 135                 140
Arg Cys Trp Tyr Ile Leu Leu Ser Gly Ser Val Leu Val Lys Gly Ser
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Met Val Leu Pro Pro Cys Ser Phe Gly Lys Gln Phe Gly Gly Lys Arg
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Gly Cys Asp Cys Leu Val Leu Glu Pro Ser Glu Met Ile Val Val Glu
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Lys Asn Leu Glu Asp Thr Lys Met Asn Gly His Leu Arg Leu Leu Asn
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4027

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Gln Asn Phe Glu Asn Ile Thr Phe Met Lys Ala Val Glu Ile Leu Arg
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Asn Asn Thr His Leu Ala Leu Thr Val Lys Thr Asn Ile Phe Val Phe
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Lys Glu Leu Leu Phe Arg Thr Glu Gln Glu Lys Ser Gly Val Pro His
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Ile Pro Lys Ile Ala Glu Lys Lys Ser Asn Arg His Ser Ile Gln His
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Val Pro Gly Asp Ile Glu Gln Thr Ser Gln Glu Lys Gly Ser Lys Lys
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Val Lys Ala Asn Thr Val Ser Gly Gly Arg Asn Lys Ile Arg Lys Ile
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Thr Glu Ala Asn Gln Leu Lys Arg Met Lys Ile Ile Lys His Phe Ile
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1680
tggatgagcc ctgaggtgat cagcggcgag ggctatggaa ggaaagcaga cgtgtggagc
1740
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1800
atggccgcca tcttcaagat tgccacccag cccaccaatc ctcagctgcc ctcccacatc
1860
tctgaacatg gccgggactt cctgaggcgc attttgtgg aggctcgcca gagaccttca
1920
gctgaggagc tgctcacaca ccactttgca cagctcatgt actgagctct cacggccaca
1980
cagctgccgg tcgccctttg ctgcatggca ggggctgct gctgggctca gtgaagttgc
2040
tgcttctccc aggcaaggct gtggaccatg gagtggcagc ccagccagcg tcggtctgtg
2100
ccccttccgc cactggggct cagagccggg gtggggtggc tgcagcctca ggactgggag
2160
ccccagcct gtcagatcca ggagctccag tgtcctgagc tcagcgtgga ggggtagggg
2220
ctgggaacag tgtgcaaggc agccgtgggc cccaccctcg gggatgtgtc ctgacactgc
2280
```

```
aattggcacc gaagcccaga gggtctgggg gcacaagact gacgccaggg tatgaagagt
2340
gttattttca ttcaaagtgt tattttgttt ttccttccaa tgtctggaga ccaccagggc
2400
atctctgggc tggatgagct cccacaagcc tgagggaaag gccagcactc gctagcagtg
2460
gcaggcagag gcccaggctg ccgtcccta gagtcccagg ttggctctgc cagtcctgtc
2520
ctttaccaaa gatgaatgaa gcaaatgtca tgctgcctta ttcagggaag gaggagcctg
2580
tcctgcctgt ggccatgacc ctgcctctcc caggcagggg cccgcgatgt ggaactgctg
2640
ccactgaggg gggatccagt tttgtcaatg cagttgtctc tgttttacaa gttggagtca
2700
ctcttatgct gtacccagtt tctaaactgg agactgtgtg tgccctctgg gctctgagta
2760
cccctgcttt gggcttgggc ctaggctgca ttgaaaagag ctgaaggttg tggcctttgc
2820
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2880
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2940
tgagtcgtga cctgctaggc cagagcccac tccatctggt agaagggaaa gcccatatgc
3000
taccaccagc tgtgtccaaa accgccagct ctgttcttcc tcagccagcc tcgcccatcc
3060
ccttgaggtc tcagcccctt tccttgtag ctcctcccct ggaggggggaa tggcagcagg
3120
ggttggggaa acagcatctc caagcagctt agagttggcc atatttacct cagcctgggc
3180
gctggtcctt tcttccggcc cctcccctcc aaaatgtgcc tattgctaga gctcctccct
3240
ctcaacaccc agtttccttg ggagttgtca ttaaaggaaa aaaaaa
3286


<210> 4846
<211> 626
<212> PRT
<213> Homo sapiens


<400> 4846
Met Asp Glu Gln Glu Ala Leu Asn Ser Ile Met Asn Asp Leu Val Ala
1               5                   10                  15
Leu Gln Met Asn Arg Arg His Arg Met Pro Gly Tyr Glu Thr Met Lys
            20                  25                  30
Asn Lys Asp Thr Gly His Ser Asn Arg Gln Ser Asp Val Arg Ile Lys
        35                  40                  45
Phe Glu His Asn Gly Glu Arg Arg Ile Ile Ala Phe Ser Arg Pro Val
    50                  55                  60
Lys Tyr Glu Asp Val Glu His Lys Val Thr Thr Val Phe Gly Gln Pro
65                  70                  75                  80
Leu Asp Leu His Tyr Met Asn Asn Glu Leu Ser Ile Leu Leu Lys Asn
            85                  90                  95
Gln Asp Asp Leu Asp Lys Ala Ile Asp Ile Leu Asp Arg Ser Ser Ser
```

```
                 100                    105                    110
     Met Lys Ser Leu Arg Ile Leu Leu Leu Ser Gln Asp Arg Asn His Asn
             115                    120                    125
     Ser Ser Ser Pro His Ser Gly Val Ser Arg Gln Val Arg Ile Lys Ala
             130                    135                    140
     Ser Gln Ser Ala Gly Asp Ile Asn Thr Ile Tyr Gln Pro Pro Glu Pro
     145                    150                    155                    160
     Arg Ser Arg His Leu Ser Val Ser Ser Gln Asn Pro Gly Arg Ser Ser
                     165                    170                    175
     Pro Pro Pro Gly Tyr Val Pro Glu Arg Gln Gln His Ile Ala Arg Gln
                     180                    185                    190
     Gly Ser Tyr Thr Ser Ile Asn Ser Glu Gly Glu Phe Ile Pro Glu Thr
                 195                    200                    205
     Ser Glu Gln Cys Met Leu Asp Pro Leu Ser Ser Ala Glu Asn Ser Leu
             210                    215                    220
     Ser Gly Ser Cys Gln Ser Leu Asp Arg Ser Ala Asp Ser Pro Ser Phe
     225                    230                    235                    240
     Arg Lys Ser Arg Met Ser Arg Ala Gln Ser Phe Pro Asp Asn Arg Gln
                     245                    250                    255
     Glu Tyr Ser Asp Arg Glu Thr Gln Leu Tyr Asp Lys Gly Val Lys Gly
                     260                    265                    270
     Gly Thr Tyr Pro Arg Arg Tyr His Val Ser Val His His Lys Asp Tyr
                 275                    280                    285
     Ser Asp Gly Arg Arg Thr Phe Pro Arg Ile Arg Arg His Gln Gly Asn
             290                    295                    300
     Leu Phe Thr Leu Val Pro Ser Ser Arg Ser Leu Ser Thr Asn Gly Glu
     305                    310                    315                    320
     Asn Met Gly Leu Ala Val Gln Tyr Leu Asp Pro Arg Gly Arg Leu Arg
                     325                    330                    335
     Ser Ala Asp Ser Glu Asn Ala Leu Ser Val Gln Glu Arg Asn Val Pro
                     340                    345                    350
     Thr Lys Ser Pro Ser Ala Pro Ile Asn Trp Arg Arg Gly Lys Leu Leu
                 355                    360                    365
     Gly Gln Gly Ala Phe Gly Arg Val Tyr Leu Cys Tyr Asp Val Asp Thr
             370                    375                    380
     Gly Arg Glu Leu Ala Ser Lys Gln Val Gln Phe Asp Pro Asp Ser Pro
     385                    390                    395                    400
     Glu Thr Ser Lys Glu Val Ser Ala Leu Glu Cys Glu Ile Gln Leu Leu
                     405                    410                    415
     Lys Asn Leu Gln His Glu Arg Ile Val Gln Tyr Tyr Gly Cys Leu Arg
                     420                    425                    430
     Asp Arg Ala Glu Lys Thr Leu Thr Ile Phe Met Glu Tyr Met Pro Gly
             435                    440                    445
     Gly Ser Val Lys Asp Gln Leu Lys Ala Tyr Gly Ala Leu Thr Glu Ser
     450                    455                    460
     Val Thr Arg Lys Tyr Thr Arg Gln Ile Leu Glu Gly Met Ser Tyr Leu
     465                    470                    475                    480
     His Ser Asn Met Ile Val His Arg Asp Ile Lys Gly Ala Asn Ile Leu
                     485                    490                    495
     Arg Asp Ser Ala Gly Asn Val Lys Leu Gly Asp Phe Gly Ala Ser Lys
                     500                    505                    510
     Arg Leu Gln Thr Ile Cys Met Ser Gly Thr Gly Met Arg Ser Val Thr
                 515                    520                    525
     Gly Thr Pro Tyr Trp Met Ser Pro Glu Val Ile Ser Gly Glu Gly Tyr
```

```
        530                  535                  540
Gly Arg Lys Ala Asp Val Trp Ser Leu Gly Cys Thr Val Val Glu Met
545                  550                  555                  560
Leu Thr Glu Lys Pro Pro Trp Ala Glu Tyr Glu Ala Met Ala Ala Ile
                565                  570                  575
Phe Lys Ile Ala Thr Gln Pro Thr Asn Pro Gln Leu Pro Ser His Ile
            580                  585                  590
Ser Glu His Gly Arg Asp Phe Leu Arg Arg Ile Phe Val Glu Ala Arg
            595                  600                  605
Gln Arg Pro Ser Ala Glu Glu Leu Leu Thr His His Phe Ala Gln Leu
        610                  615                  620
Met Tyr
625
```

<210> 4847
<211> 2804
<212> DNA
<213> Homo sapiens

<400> 4847
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ccaacagcag cggagaaacg tttctctttc ctctcagttt gcgcacacca tggcggcccc
60
tgcccagcag actactcagc ctggcggcgg gaagcgcaaa ggcaaggctc agtatgtgct
120
ggccaagcgc gctcggcgct gcgacgctgg cgggcccgt cagctagagc ccgggctaca
180
gggcatcctc atcacctgca atatgaacga gcgcaagtgc gtggaggagg cctacagcct
240
cctcaacgaa tacggcgacg acatgtatgg gccagaaaag ttttatgcaa acagtttaca
300
gacaaggatc agcagccctc tggaagtgag ggagaggatg atgatgcgga ggctgccttg
360
aagaaagaag ttggtgacat taaggcatct acagagatga ggttaagaag attccagtca
420
gtggaaagtg gagcaaataa cgttgtcttc atcaggacac ttgggataga gcctgagaaa
480
ttggtgcatc atattctcca ggatatgtac aaaaccaaga aaagaagac tcgagttatt
540
ttgcgaatgt tacccatctc aggcacatgc aaggcttttt tagaagatat gaaaaaatat
600
gcagaaacat ttttggaacc ctggtttaaa gctccaaaca aagggacatt tcagattgtg
660
tacaaatctc gaaataacag tcatgtgaat agagaagaag ttatcagaga attggcagga
720
atagtgtgca ccctcaattc agaaaataaa gtggatctca ccaatccaca gtacacagtg
780
gtagtagaaa tcatcaaagc tgtctgttgc ctgagtgttg tgaaagatta catgttgttt
840
agaaaataca atctccagga ggtggtgaag agccctaagg atccgtcaca gcttaactca
900
aagcagggaa atgggaaaga agctaaactg gaatctgcgg acaaatcaga ccaaaacaac
960
acagcagaag gaaaaaataa ccagcaggta ccagagaata ctgaggagct agggcagaca
1020
```

```
aaaccaacgt ctaatccaca ggtggtaaat gagggaggag ccaaacctga acttgcaagt
1080
caagccacag aaggatccaa gtcaaatgaa aatgacttct cataggaagt catttggtgt
1140
tggagctgac agtccagtgt cgcaattttg gaaggcaaga tgtgagagag acgagaacca
1200
ttttaggcat agaactacag acatttctga aaaggttggt gatgaagaac ttcagtcttc
1260
tgagtatact tcagtatact agtgcaacaa gggacacaaa gaaattctgt cttaataaag
1320
aaagctactt ctcaagggta ttatgtggac tcagtccaag ctctcctgtc ccattgtgca
1380
ttgtctgtga catgcaactt acaaaactag caattgtaac aataaatcac agccacttga
1440
caagaaagga tattcattat tttcaaatgg cttttggact atcaaaaaca gtaaggcttt
1500
tgttcagaaa tcacctttag tcaaaaggtt taagaagcaa attatttagt agcagaactt
1560
atctcaggaa aggaaaatat gcatggttgg tgagaatcta ataacattaa aatgctgggg
1620
caagatgcag tacaaagttg aagagacttt attctcaata agttgattta ctgatgatat
1680
gtcatatgat gcaaaaaagg ttttgtgtca ttaactgaaa agtagcagct tctctatcca
1740
ggatgatgag tcaacaggtt tcactaatat ttgtcatgct gtagcatttg taagatttgt
1800
aaatgatgaa attcaaagaa aacttttct attgctagga gcctgccaga acaaaggcca
1860
atatataatg ttgtgacatc atatctgata accagaggtc tggtatctac actcctggtg
1920
ccccatcagt ggttgtctcc ataagtcatt ttgcgttatt aaaaaaaaaa aaagaaatcc
1980
tgatgttgac attatagcac actgctttct ccacagagat gctgatatca aaaacttgaa
2040
gatacagtga agttctgaat aatgttacaa aactggttac ctgtatcaaa gacccatta
2100
tgcaaaaatg ttaaaaaaaa aaaacaccca aaacaaaac ctggacagac agcacataaa
2160
cctcctgccc catacaaaca tccaggggct tctcaaagga agcgttctct acaggatatt
2220
tgaattgaaa ggtgaattgc cagagtactt acaataaaac agccagcttt tgctgagtgc
2280
tttggaaatg aaaaatgact acagaaagta gcctattttg cagacgtttt tcatcacatg
2340
aacaaatgga caagtctctg aaaggttctg gggaaaaaaa ttttttcttaa agcgacaaga
2400
ctcttagatc taaaaggaaa ctgacttgcc accttgccag aggaattctt gaaatgtttc
2460
tgcagccact tggccttgaa aataaagggt gcaactctca agtcttgttc taacccggct
2520
ggaggaacca caagacccaa tgaaatagca ttttctctcc ttttcccagc actagtatat
2580
aacctatgag gaacccttgt ctctgaatct gctcagcttg aaattttgtc tctgaaggaa
2640
```

```
gagaatgaac tcagccctag tctgacagtc ctagatttct gtgaaataag agtattcttc
2700
aacttagtgc tcacactcac ataccatgag ggttctctgc aggggtttag gggtttcctg
2760
aatttaaaag ttttttcaag gcctcttttt gggtaaaaca attg
2804


<210> 4848
<211> 242
<212> PRT
<213> Homo sapiens


<400> 4848
Met Arg Leu Arg Arg Phe Gln Ser Val Glu Ser Gly Ala Asn Asn Val
 1               5                  10                  15
Val Phe Ile Arg Thr Leu Gly Ile Glu Pro Glu Lys Leu Val His His
                20                  25                  30
Ile Leu Gln Asp Met Tyr Lys Thr Lys Lys Lys Thr Arg Val Ile
         35                  40                  45
Leu Arg Met Leu Pro Ile Ser Gly Thr Cys Lys Ala Phe Leu Glu Asp  ..
     50                  55                  60
Met Lys Lys Tyr Ala Glu Thr Phe Leu Glu Pro Trp Phe Lys Ala Pro
65                  70                  75                  80
Asn Lys Gly Thr Phe Gln Ile Val Tyr Lys Ser Arg Asn Asn Ser His
                85                  90                  95
Val Asn Arg Glu Glu Val Ile Arg Glu Leu Ala Gly Ile Val Cys Thr
                100                 105                 110
Leu Asn Ser Glu Asn Lys Val Asp Leu Thr Asn Pro Gln Tyr Thr Val
         115                 120                 125
Val Val Glu Ile Ile Lys Ala Val Cys Cys Leu Ser Val Val Lys Asp
     130                 135                 140
Tyr Met Leu Phe Arg Lys Tyr Asn Leu Gln Glu Val Val Lys Ser Pro
145                 150                 155                 160
Lys Asp Pro Ser Gln Leu Asn Ser Lys Gln Gly Asn Gly Lys Glu Ala
                165                 170                 175
Lys Leu Glu Ser Ala Asp Lys Ser Asp Gln Asn Asn Thr Ala Glu Gly
             180                 185                 190
Lys Asn Asn Gln Gln Val Pro Glu Asn Thr Glu Glu Leu Gly Gln Thr
         195                 200                 205
Lys Pro Thr Ser Asn Pro Gln Val Val Asn Glu Gly Gly Ala Lys Pro
     210                 215                 220
Glu Leu Ala Ser Gln Ala Thr Glu Gly Ser Lys Ser Asn Glu Asn Asp
225                 230                 235                 240
Phe Ser


<210> 4849
<211> 321
<212> DNA
<213> Homo sapiens


<400> 4849
nccatgtgtg gaggcagaga ggcagcatcc aggcgctggt cctctcggga catgctgctg
60
```

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ctgaagaaac acacggagga catcagcagc gtctacgaga tccgcgagag gctcggctcg
120
ggtgccttct ccgaggtggt gctggcccag gagcggggct ccgcacacct cgtggccctc
180
aagtgcatcc ccaagaaggc cctccggggc aaggaggccc tggtggagaa cgagatcgca
240
gtgctccgta ggatcagtca ccccaacatc gtcgctctgg aggatgtcca cgagagccct
300
tcccacctct acctggccat g
321
```

```
<210> 4850
<211> 90
<212> PRT
<213> Homo sapiens
```

```
<400> 4850
Met Leu Leu Leu Lys Lys His Thr Glu Asp Ile Ser Ser Val Tyr Glu
1               5                   10                  15
Ile Arg Glu Arg Leu Gly Ser Gly Ala Phe Ser Glu Val Val Leu Ala
            20                  25                  30
Gln Glu Arg Gly Ser Ala His Leu Val Ala Leu Lys Cys Ile Pro Lys
        35                  40                  45
Lys Ala Leu Arg Gly Lys Glu Ala Leu Val Glu Asn Glu Ile Ala Val
    50                  55                  60
Leu Arg Arg Ile Ser His Pro Asn Ile Val Ala Leu Glu Asp Val His
65                  70                  75                  80
Glu Ser Pro Ser His Leu Tyr Leu Ala Met
                85                  90
```

```
<210> 4851
<211> 820
<212> DNA
<213> Homo sapiens
```

```
<400> 4851
aagatctgag cgagtcgcgt agctgagccc ggcaggggct ggggtggtgc tgctgctatg
60
agttgcacca tcgagaagat cctgacagac gccaagacgc tgctggagag gctacgggag
120
cacgatgcgg ccgccgagtc gctggtggat cagtcggcgg cgctgcaccg gcgggtagca
180
gctatgcggg aggcggggac agcgcttccg gaccagtatc aagaggatgc atccgatatg
240
aaggacatgt ccaaatacaa acctcacatt ctgctgtccc aagagaacac acagattaga
300
gacttgcaac aggaaaacag agagctatgg atttccttgg aggaacacca ggatgctttg
360
gaacttatca tgagcaaata tcggaaacag atgttacagt taatggttgc taaaaaagcg
420
gtggatgctg aaccagtcct gaaagctcac cagtctcact ctgcagaaat tgagagtcag
480
attgacagaa tctgtgaaat gggagaagtg atgaggaaag cagttcaggt ggatgatgac
540
```

cagttttgta agattcagga aaaattagcc caattagagc ttgaaaataa ggaacttcga
600
gaattattgt ccatcagcag tgagtctctt caagccagaa aggaaaactc aatggacact
660
gcttcccaag ccatcaaata actgaactct gaatgatggc tggagattgt ctatcaagga
720
aggaagttac tgtcttccca ttcaagtact gtccattaag tgtcttgcct cagatttgat
780
ttaatcttaa ttaaaggtat caggtggcaa tttagaattc
820

<210> 4852
<211> 207
<212> PRT
<213> Homo sapiens

<400> 4852
Met Ser Cys Thr Ile Glu Lys Ile Leu Thr Asp Ala Lys Thr Leu Leu
1   5   10   15
Glu Arg Leu Arg Glu His Asp Ala Ala Ala Glu Ser Leu Val Asp Gln
            20   25   30
Ser Ala Ala Leu His Arg Arg Val Ala Ala Met Arg Glu Ala Gly Thr
        35   40   45
Ala Leu Pro Asp Gln Tyr Gln Glu Asp Ala Ser Asp Met Lys Asp Met
    50   55   60
Ser Lys Tyr Lys Pro His Ile Leu Leu Ser Gln Glu Asn Thr Gln Ile
65   70   75   80
Arg Asp Leu Gln Gln Glu Asn Arg Glu Leu Trp Ile Ser Leu Glu Glu
                85   90   95
His Gln Asp Ala Leu Glu Leu Ile Met Ser Lys Tyr Arg Lys Gln Met
            100   105   110
Leu Gln Leu Met Val Ala Lys Lys Ala Val Asp Ala Glu Pro Val Leu
            115   120   125
Lys Ala His Gln Ser His Ser Ala Glu Ile Glu Ser Gln Ile Asp Arg
        130   135   140
Ile Cys Glu Met Gly Glu Val Met Arg Lys Ala Val Gln Val Asp Asp
145   150   155   160
Asp Gln Phe Cys Lys Ile Gln Glu Lys Leu Ala Gln Leu Glu Leu Glu
                165   170   175
Asn Lys Glu Leu Arg Glu Leu Leu Ser Ile Ser Ser Glu Ser Leu Gln
            180   185   190
Ala Arg Lys Glu Asn Ser Met Asp Thr Ala Ser Gln Ala Ile Lys
        195   200   205

<210> 4853
<211> 1467
<212> DNA
<213> Homo sapiens

<400> 4853
ntgtgaggtc gcgttcccca gtgttacgga gggtccttga ggcaggagtg aaaattgggt
60
ctgggggtta gtcctggggt ggaggtctgg gcacgccggg tcggaccccc tccatcttcg
120

4038

```
gttttgcaca ccccgctttc cagcgcggag tcgggcgggg gtagggcggc gtcgcgtgcg
180
tgacgtcatc cagcggcgcc atcggaggct ccagtggcct tgacctcccg cgtcgtgtag
240
gcctgcgcgg cgatgctgca gttcgtccgg gccggggcgc gggcctggct tcggcctacc
300
ggcagccagg gcctgagttc cctggcggaa gaggcagcgc gtgcgaccga gaacccggag
360
caggtggcga gcgagggtct cccggagccc gtgctgcgca aagtcgagct cccggtaccc
420
actcatcgac gcccagtgca ggcctgggtc gagtccttgc ggggcttcga gcaggagcgc
480
gtgggcctgg ccgacctgca ccccgatgtt ttcgccaccg cgcccaggct ggacatactg
540
caccaggttg ctatgtggca gaagaacttc aagagaatta gctatgccaa gaccaagacg
600
agagccgagg tgcggggcgg tggccggaag cctntggccg cagaaaggca ctgggcgggc
660
ccggcatggc agcatccgct ctccgctctg gcgaggagga ggtgttgccc atggcccccg
720
ggccccacaa gttactacta catgctgccc atgaaggtgc gggcgctggg tctcaaagtg
780
gcactgaccg tcaagctggc ccaggacgac ctgcacatca tggactccct agagctgccc
840
accggagacc cacagtacct gacagagctg gcgcactacc gccgctgggg ggactccgta
900
ctcctcgtgg acttaacaca cgaggagatg ccacagagca tcgtggaggc cacctctagg
960
cttaagacct tcaacttgat cccggctgtt ggcctaaatg tgcacagcat gctcaagcac
1020
cagacgctgg tcctgacgct gcccaccgtc gccttcctgg aggacaagct gctctggcag
1080
gactcacgtt acagacccct ctaccccttc agcctgccct acagcgactt cccccgaccc
1140
ctaccccacg ctacccaggg cccagcggcc accccgtacc actgttgatg tgaagcacct
1200
cttctgagcc aggccgagcc cctggccgac ttgggagcct taggcccacg cccacccttc
1260
gaggaaggtg tcacctggac cccttcattc cacggaggaa gctgaggcca cagggagcgg
1320
ccatcgccat tgggaagggg cgactccacg gagagcccag acggggcttc tgcatccatt
1380
ccctcttttt gttttaaaaa taaattgtat ttttgaatca aaaaaaaaa aaaaaaaaa
1440
aaaaaaaaaa aaaaaaaaaa aaaaaaa
1467
```

```
<210> 4854
<211> 311
<212> PRT
<213> Homo sapiens

<400> 4854
Met Leu Gln Phe Val Arg Ala Gly Ala Arg Ala Trp Leu Arg Pro Thr
```

```
      1                 5                    10                     15
    Gly Ser Gln Gly Leu Ser Ser Leu Ala Glu Glu Ala Ala Arg Ala Thr
                    20                    25                    30
    Glu Asn Pro Glu Gln Val Ala Ser Glu Gly Leu Pro Glu Pro Val Leu
                35                    40                    45
    Arg Lys Val Glu Leu Pro Val Pro Thr His Arg Arg Pro Val Gln Ala
            50                    55                    60
    Trp Val Glu Ser Leu Arg Gly Phe Glu Gln Glu Arg Val Gly Leu Ala
    65                    70                    75                    80
    Asp Leu His Pro Asp Val Phe Ala Thr Ala Pro Arg Leu Asp Ile Leu
                    85                    90                    95
    His Gln Val Ala Met Trp Gln Lys Asn Phe Lys Arg Ile Ser Tyr Ala
                    100                   105                   110
    Lys Thr Lys Thr Arg Ala Glu Val Arg Gly Gly Gly Arg Lys Pro Xaa
                115                   120                   125
    Ala Ala Glu Arg His Trp Ala Gly Pro Ala Trp Gln His Pro Leu Ser
        130                   135                   140
    Ala Leu Ala Arg Arg Arg Cys Cys Pro Trp Pro Pro Gly Pro Thr Ser
    145                   150                   155                   160
    Tyr Tyr Tyr Met Leu Pro Met Lys Val Arg Ala Leu Gly Leu Lys Val
                    165                   170                   175
    Ala Leu Thr Val Lys Leu Ala Gln Asp Asp Leu His Ile Met Asp Ser
                180                   185                   190
    Leu Glu Leu Pro Thr Gly Asp Pro Gln Tyr Leu Thr Glu Leu Ala His
                195                   200                   205
    Tyr Arg Arg Trp Gly Asp Ser Val Leu Leu Val Asp Leu Thr His Glu
        210                   215                   220
    Glu Met Pro Gln Ser Ile Val Glu Ala Thr Ser Arg Leu Lys Thr Phe
    225                   230                   235                   240
    Asn Leu Ile Pro Ala Val Gly Leu Asn Val His Ser Met Leu Lys His
                    245                   250                   255
    Gln Thr Leu Val Leu Thr Leu Pro Thr Val Ala Phe Leu Glu Asp Lys
                260                   265                   270
    Leu Leu Trp Gln Asp Ser Arg Tyr Arg Pro Leu Tyr Pro Phe Ser Leu
                275                   280                   285
    Pro Tyr Ser Asp Phe Pro Arg Pro Leu Pro His Ala Thr Gln Gly Pro
        290                   295                   300
    Ala Ala Thr Pro Tyr His Cys
    305                   310
```

```
<210> 4855
<211> 750
<212> DNA
<213> Homo sapiens

<400> 4855
nncgcaggag taacctactt ggtctcctgc tttcgcgaca tggccttcaa ttttgggggct
60
ccctcgggca cctccggtac cgctgcagcc accgcggccc ccgcgggtgg gtttggagga
120
tttgggacaa catctacaac tgcaggttct gcattcagct tttctgcccc aactaacaca
180
ggcactactg gactctttgg tggtactcag aacaaaggtt ttggatttgg tactggtttt
240
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ggcacaacaa cgggaactag tactggttta ggtactggtt tgggaactgg actgggattt
300
ggaggattta atacacagca gcagcagcag caaactacat taggtggtct cttcagtcag
360
cctacacaag ctcctaccca gtccaaccag ctgataaata ctgcgagtgc tctttctgct
420
ccaacgctgt gggagatga gagagatgct attttggcaa aatggaatca actgcaggcc
480
ttttggggaa caggaaaagg gtatttcaac aataatattc cgccagtgga attcacacaa
540
gaaaatccct tttgccgatt taaggcagta ggttatagtt gcatgcccag taataaagat
600
gaagacgggc tagtggtttt agttttcaac aaaaaagaaa cagagattcg aagccaacaa
660
caacagttgg tagaatcatt gcataaagtt ttgggaggaa accagaccct tactgtaaat
720
gtagagggca ctaaaacatt gccagatgat
750

<210> 4856
<211> 237
<212> PRT
<213> Homo sapiens

<400> 4856
Met Ala Phe Asn Phe Gly Ala Pro Ser Gly Thr Ser Gly Thr Ala Ala
1   5   10   15
Ala Thr Ala Ala Pro Ala Gly Gly Phe Gly Gly Phe Gly Thr Thr Ser
            20   25   30
Thr Thr Ala Gly Ser Ala Phe Ser Phe Ser Ala Pro Thr Asn Thr Gly
        35   40   45
Thr Thr Gly Leu Phe Gly Gly Thr Gln Asn Lys Gly Phe Gly Phe Gly
        50   55   60
Thr Gly Phe Gly Thr Thr Thr Gly Thr Ser Thr Gly Leu Gly Thr Gly
65   70   75   80
Leu Gly Thr Gly Leu Gly Phe Gly Gly Phe Asn Thr Gln Gln Gln Gln
                85   90   95
Gln Gln Thr Thr Leu Gly Gly Leu Phe Ser Gln Pro Thr Gln Ala Pro
            100   105   110
Thr Gln Ser Asn Gln Leu Ile Asn Thr Ala Ser Ala Leu Ser Ala Pro
        115   120   125
Thr Leu Leu Gly Asp Glu Arg Asp Ala Ile Leu Ala Lys Trp Asn Gln
        130   135   140
Leu Gln Ala Phe Trp Gly Thr Gly Lys Gly Tyr Phe Asn Asn Asn Ile
145   150   155   160
Pro Pro Val Glu Phe Thr Gln Glu Asn Pro Phe Cys Arg Phe Lys Ala
                165   170   175
Val Gly Tyr Ser Cys Met Pro Ser Asn Lys Asp Glu Asp Gly Leu Val
            180   185   190
Val Leu Val Phe Asn Lys Lys Glu Thr Glu Ile Arg Ser Gln Gln Gln
        195   200   205
Gln Leu Val Glu Ser Leu His Lys Val Leu Gly Gly Asn Gln Thr Leu
        210   215   220
Thr Val Asn Val Glu Gly Thr Lys Thr Leu Pro Asp Asp

225   230   235

<210> 4857
<211> 2887
<212> DNA
<213> Homo sapiens

<400> 4857
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ctcgggagct ccagtcaggc cgcctgcctc aaacagatcc ttctgctgca attggacctc
120
atcgaacagc agcagcagca gctgcaggcc aaggaaaagg agatcgagga gctgaagtca
180
gagagagaca cgctccttgc tcggattgaa cgtatggaaa ggcggatgca gctggtaaag
240
aaggataacg agaaagaaag gcacaagctg tttcagggct atgaaactga agagagagag
300
gaaacagagc tatctgagaa aattaaactg gagtgccagc cggagctttc cgagacatcc
360
cagactctgc ctcccaagcc cttctcatgt gggcggagtg gaaagggaca taaaaggaaa
420
tccccatttg gaagtacaga agaaagact cctgttaaaa agctggctcc tgaattttca
480
aaagtcaaaa caaaaactcc taagcactct cctattaaag aggaaccctg tggttcctta
540
tctgaaactg tttgtaaacg tgaattgagg agccaagaaa ccccagaaaa gccccggtct
600
tcagtggaca ccccaccaag actctccact ccccaaaagg gacccagcac ccatcccaag
660
gagaaagcct tctcaagtga gatagaagat ttgccgtacc tttccaccac agaaatgtat
720
ttgtgtcgtt ggcaccagcc tcccccatca ccgttaccat tacgggaatc ctctccaaag
780
aaggaggaga ctgtagcaag taaggcatag agaacacttg ctcttatacc ctagtggtgg
840
cggtcaagct aacaagtgtg aaaatgcctt tggcattttt aaaaaagtgc aatcaataaa
900
gcagagttct gtcaagaatg agtaagttaa cagccagaga cagacactgt gcaggcattg
960
caaatagatg gaattacagc aaaatgtgct caatgtattt gcctgcttac aacactggga
1020
gatgtgtttg ccagtaagtt gctcatcaca agagcaccag acttgggggt gtaatctccg
1080
gcaacttgca tgccctctga aagaagggtt ttctgtgctg tgaaatgcat agaactatac
1140
tttgccatgc acgactgttc ctgcaattga tattgtgtga aatctgggag ggtggtcttt
1200
gggtgttctc aggggccaat ggtaattttt gggttgggga gccagcttgg ggtggggaat
1260
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1320
tctggggggc aggaggaatc tgccaaagac caacagtctt actttatctt actatacttc
1380

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acaaaggttc taaaatgtga agagtttgtt tgaaaaatag tttgtagacc attttatttta
1440
aatatatgaa caaccaatgg gctactgcaa tccaagtaaa ctcttcacat tttagaacct
1500
ttgtgaagta tagtaagata aagtaagact gttggtcttt ggcagattcc tcctgccccc
1560
cagacaggga catagatata cagataaatg tttatatagt taaagagcgg aggcccaggt
1620
gaaaattccc caccccaagc tggctcccca acccaaaaat taccattggc ccctgagaac
1680
acccaaagac caccctccca gatttcacac aatatcaatt gcaggaacag tcgtgcatgg
1740
caaagtatag ttctatgcat ttcacagcac agaaaaccct tctttcagag ggcatgcaag
1800
ttgccggaga ttacaccccc aagtctggtg ctcttgtgat gagcaactta ctggcaaaca
1860
catctcccag tgttgtaagc aggcaaatac attgagcaca ttttgctgta attccatcta
1920
tttgcaatgc ctgcacagtg tctgtctctg gctgttaact tactcattct tgacagaact
1980
ctgctttatt gattgcactt ttttaaaaat gccaaaggca ttttcacact tgttagcttg
2040
accgccacca ctagggtata agagcaagtg ttctctatgc cttacttgct acagtctcct
2100
ccttctttgg agaggattcc cgtaatggta acggtgatgg gggaggctgg tgccaacgac
2160
acaaatacat ttctgtggtg gaaaggtacg gcaaatcttc tatctcactt gagaaggctt
2220
tctccttggg atgggtgctg ggtccctttt ggggagtgga gagtcttggt ggggtgtcca
2280
ctgaagaccg gggctttttct ggggtttctt ggctcctcaa ttcacgttta caaacagttt
2340
cagataagga accacagggt tcctctttaa taggagagtg cttaggagtt tttgttttga
2400
cttttgaaaa ttcaggagcc agcttttttaa caggagtctt tctttctgta cttccaaatg
2460
ggggtagaag tctaacccct ccaccccctc tcctccccag cagtcccacg cgggtatggg
2520
agagaatgaa gttctttgtc tctaagggat tcaaaccaga aacggaggga cctctggttc
2580
ccagagggag gaaaatccat gatgtctgct gcccagggag ctattgccac cgcctccttg
2640
ggatgaagta ttgccagcta ccaacagttc cttcccaacg gccatcttcc agccttctta
2700
aacgactcct agcatcttcg ggaggctcct gaaggactga agcaaaggaa atctctgaag
2760
ggatttagtc cttgaaaggg agtagggata cttagggtgt tctgtgttga gcgcttcttc
2820
ctatctctcc agcttcatgt atgtgtgtct ttatgtccaa gcaattgagc caacaagtcc
2880
tcagaat
2887
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<210> 4858

<211> 269
<212> PRT
<213> Homo sapiens

<400> 4858
Xaa Gly Arg Arg Gly Gln Met Glu Glu Tyr Glu Glu Glu Pro Ser Arg
 1   5   10   15
Gly Trp Trp Arg Leu Gly Ser Ser Ser Gln Ala Ala Cys Leu Lys Gln
            20   25   30
Ile Leu Leu Leu Gln Leu Asp Leu Ile Glu Gln Gln Gln Gln Gln Leu
        35   40   45
Gln Ala Lys Glu Lys Glu Ile Glu Glu Leu Lys Ser Glu Arg Asp Thr
    50   55   60
Leu Leu Ala Arg Ile Glu Arg Met Glu Arg Arg Met Gln Leu Val Lys
65   70   75   80
Lys Asp Asn Glu Lys Glu Arg His Lys Leu Phe Gln Gly Tyr Glu Thr
                85   90   95
Glu Glu Arg Glu Glu Thr Glu Leu Ser Glu Lys Ile Lys Leu Glu Cys
            100   105   110
Gln Pro Glu Leu Ser Glu Thr Ser Gln Thr Leu Pro Pro Lys Pro Phe
            115   120   125
Ser Cys Gly Arg Ser Gly Lys Gly His Lys Arg Lys Ser Pro Phe Gly
    130   135   140
Ser Thr Glu Arg Lys Thr Pro Val Lys Lys Leu Ala Pro Glu Phe Ser
145   150   155   160
Lys Val Lys Thr Lys Thr Pro Lys His Ser Pro Ile Lys Glu Glu Pro
                165   170   175
Cys Gly Ser Leu Ser Glu Thr Val Cys Lys Arg Glu Leu Arg Ser Gln
            180   185   190
Glu Thr Pro Glu Lys Pro Arg Ser Ser Val Asp Thr Pro Pro Arg Leu
            195   200   205
Ser Thr Pro Gln Lys Gly Pro Ser Thr His Pro Lys Glu Lys Ala Phe
    210   215   220
Ser Ser Glu Ile Glu Asp Leu Pro Tyr Leu Ser Thr Thr Glu Met Tyr
225   230   235   240
Leu Cys Arg Trp His Gln Pro Pro Pro Ser Pro Leu Pro Leu Arg Glu
                245   250   255
Ser Ser Pro Lys Lys Glu Glu Thr Val Ala Ser Lys Ala
            260   265

<210> 4859
<211> 689
<212> DNA
<213> Homo sapiens

<400> 4859
cctgctgagg acatgaggac ccgtcttttt gcagtgccag gcagggtggc caaagaggac
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tggactctgg acctggagcc ccgtggtcca gttcacattc accccacaag agtttcagga
120
ggcctcccac ggtgcctgtg ctgggtggcg gtggtggtgc caagaggaat ggaatgtcct
180
gggctccttc aggagctctc tacccagggg caaggagagc ccagagagaa gcgccctggt
240

ctcttgagct tcctgatctg ctcctgtccc ccgctctcct ccactccctt gcctttccct
300
aggttgtccc ctccctgggc ttttgtgtgt tttgggagat gtcacctaac caggacattg
360
atattcaatc ccatccccct tcctcccacc ctgccccact ttgatttaat cctttggctg
420
tgggctgagg cctcccaggg aagttgggtg gggtgggtgt tgagacccc tcagaccagc
480
acagagacct gtccttgtgc agtctgcacc ctgcactccc tcccttgcct gtagatgttc
540
tggatgacag tagaggaaat ggacaaggtc agtttgaata tcccagaaca cagtgctctg
600
tctcctccca ccagtccagt tagcttccct tctggaccaa tagacgaggg gagaccccat
660
ggatcctctg gctgggaagc acctgacca
689

<210> 4860
<211> 173
<212> PRT
<213> Homo sapiens

<400> 4860
Met Arg Thr Arg Leu Phe Ala Val Pro Gly Arg Val Ala Lys Glu Asp
1   5   10   15
Trp Thr Leu Asp Leu Glu Pro Arg Gly Pro Val His Ile His Pro Thr
            20   25   30
Arg Val Ser Gly Gly Leu Pro Arg Cys Leu Cys Trp Val Ala Val Val
            35   40   45
Val Pro Arg Gly Met Glu Cys Pro Gly Leu Leu Gln Glu Leu Ser Thr
        50   55   60
Gln Gly Gln Gly Glu Pro Arg Glu Lys Arg Pro Gly Leu Leu Ser Phe
65   70   75   80
Leu Ile Cys Ser Cys Pro Pro Leu Ser Ser Thr Pro Leu Pro Phe Pro
                85   90   95
Arg Leu Ser Pro Pro Trp Ala Phe Val Cys Phe Gly Arg Cys His Leu
            100   105   110
Thr Arg Thr Leu Ile Phe Asn Pro Ile Pro Leu Pro Pro Thr Leu Pro
            115   120   125
His Phe Asp Leu Ile Leu Trp Leu Trp Ala Glu Ala Ser Gln Gly Ser
        130   135   140
Trp Val Gly Trp Val Leu Arg Pro Pro Gln Thr Ser Thr Glu Thr Cys
145   150   155   160
Pro Cys Ala Val Cys Thr Leu His Ser Leu Pro Cys Leu
                165   170

<210> 4861
<211> 1622
<212> DNA
<213> Homo sapiens

<400> 4861
ctgcagactt ccggcggcgc gctgcaggcg cggggaacac caatggcggg gtacttgaag
60

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ctggtgtgtg tttcctttca gcgtcaaggg ttccacactg ttgggagtcg ctgcaagaat
120
cggacaggcg ctgagcacct gtggctgacc cgacatctca gggacccatt tgtgaaggct
180
gcgaaggtgg agagttaccg gtgtcgaagc gccttcaagc tcctggaggt gaacgagagg
240
caccagattc tgcggcccgg ccttcgggtg ttagactgtg gggcagctcc tggggcctgg
300
agtcaggtgg cggtgcagaa ggtcaacgcc gcaggcacag atcccagctc tcctgttggc
360
ttcgtgcttg gggtagatct tcttcacata ttccccctgg aaggagcaac ttttctgtgc
420
cctgctgacg tgactgaccc gagaacctca cagagaatcc tcgaggtgct tcctggcagg
480
agagcagatg tgattctgag cgacatggcg cccaatgcca cagggttccg ggacctcgat
540
catgacaggc tcatcagcct gtgcctgacc cttctcagcg tgaccccaga catcctgcaa
600
cctgggggga cattcctttg taaaacctgg gctggaagtc aaagccgtcg gttacagagg
660
agactgacag aggaattcca gaatgtaagg atcatcaaac ctgaagccag caggaaagag
720
tcatcagaag tgtacttctt ggccacacag taccacggaa ggaagggcac tgtgaagcag
780
tgaggatttc ttgtgccatt ttcataatgg tcattagctc cttttaagct agaaacgtag
840
cctgagctcc tgaagagttc ctgggagatt tgagctgatt ttggagatgg agcaggacaa
900
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960
ctaagttcag gggccatgga aaatgaaaaa gtccgctata ttgtgatttg ggaagagaaa
1020
gttatcaaga gaaagaggtg aggatggaag gatggagaaa aacagactgt gggaaggatc
1080
agaaggaatc cgccgaggca gggatgggtg tgcccatgtg tgccttgacg ggacttcatc
1140
ttatagactg ttaaactgtc acacacaaac aggctttcca cccctgctct gagagcacca
1200
cgcacagatt tccagttctt agtgtggctg tttaaagtag aaaatctggg ggctgggtga
1260
ggccactcat gcctgtaaac ccagggcttt agaaggctga ggctggggga ttgcttgaag
1320
tcaggagttc aagaccaacc tgggcaacat agcaacaccc cccatgtcta caaaaatgaa
1380
aaaccaaaaa gcaaaccaaa agaaaaatct gaaatttcca tctggggatt aacttctgtc
1440
tttctggtga acaatatagc aattcacgca ttcttcaagc agcaaaagtt cccggaacaa
1500
ttagggaaga cgtatggtct gaatttatcc aggcagtggg tctgctttgg tttttgctgg
1560
aaatttatat cagtgtctgg ctcccaaga acataaatgt aattgccaaa gcaaaaaaaa
1620
aa
1622
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<210> 4862
<211> 260
<212> PRT
<213> Homo sapiens

<400> 4862

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Leu Gln Thr Ser Gly Gly Ala Leu Gln Ala Arg Gly Thr Pro Met Ala
1               5                   10                  15
Gly Tyr Leu Lys Leu Val Cys Val Ser Phe Gln Arg Gln Gly Phe His
            20                  25                  30
Thr Val Gly Ser Arg Cys Lys Asn Arg Thr Gly Ala Glu His Leu Trp
        35                  40                  45
Leu Thr Arg His Leu Arg Asp Pro Phe Val Lys Ala Ala Lys Val Glu
    50                  55                  60
Ser Tyr Arg Cys Arg Ser Ala Phe Lys Leu Leu Glu Val Asn Glu Arg
65                  70                  75                  80
His Gln Ile Leu Arg Pro Gly Leu Arg Val Leu Asp Cys Gly Ala Ala
                85                  90                  95
Pro Gly Ala Trp Ser Gln Val Ala Val Gln Lys Val Asn Ala Ala Gly
            100                 105                 110
Thr Asp Pro Ser Ser Pro Val Gly Phe Val Leu Gly Val Asp Leu Leu
        115                 120                 125
His Ile Phe Pro Leu Glu Gly Ala Thr Phe Leu Cys Pro Ala Asp Val
    130                 135                 140
Thr Asp Pro Arg Thr Ser Gln Arg Ile Leu Glu Val Leu Pro Gly Arg
145                 150                 155                 160
Arg Ala Asp Val Ile Leu Ser Asp Met Ala Pro Asn Ala Thr Gly Phe
                165                 170                 175
Arg Asp Leu Asp His Asp Arg Leu Ile Ser Leu Cys Leu Thr Leu Leu
            180                 185                 190
Ser Val Thr Pro Asp Ile Leu Gln Pro Gly Gly Thr Phe Leu Cys Lys
        195                 200                 205
Thr Trp Ala Gly Ser Gln Ser Arg Arg Leu Gln Arg Arg Leu Thr Glu
    210                 215                 220
Glu Phe Gln Asn Val Arg Ile Ile Lys Pro Glu Ala Ser Arg Lys Glu
225                 230                 235                 240
Ser Ser Glu Val Tyr Phe Leu Ala Thr Gln Tyr His Gly Arg Lys Gly
                245                 250                 255
Thr Val Lys Gln
            260
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<210> 4863
<211> 355
<212> DNA
<213> Homo sapiens

<400> 4863

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ctgggggctc actttcgggt gcacctggtg aagatggtca ttctgacaga gcctgagggt
60
gccccaaata tcacagccaa cctcacctcg tccctgctga gcgtctgtgg gtggagccag
120
accatcaacc ctgaggacga cacggatcct ggccatgctg acctggtcct ctatatcact
180
```

aggtttgacc tggagttgcc tgatggtaac ncggcagtgc ggggcgtcac ccagctgggc
240
ggggcctgct ccccaacctg gagctgcctc attaccgagg acactggctt cgacctggga
300
gtcaccattg cccatgagat tgggcacagc ttcggcctgg agcacgacgg cgcgc
355

<210> 4864
<211> 118
<212> PRT
<213> Homo sapiens

<400> 4864
Leu Gly Ala His Phe Arg Val His Leu Val Lys Met Val Ile Leu Thr
1   5   10   15
Glu Pro Glu Gly Ala Pro Asn Ile Thr Ala Asn Leu Thr Ser Ser Leu
            20   25   30
Leu Ser Val Cys Gly Trp Ser Gln Thr Ile Asn Pro Glu Asp Asp Thr
        35   40   45
Asp Pro Gly His Ala Asp Leu Val Leu Tyr Ile Thr Arg Phe Asp Leu
    50   55   60
Glu Leu Pro Asp Gly Asn Xaa Ala Val Arg Gly Val Thr Gln Leu Gly
65   70   75   80
Gly Ala Cys Ser Pro Thr Trp Ser Cys Leu Ile Thr Glu Asp Thr Gly
                85   90   95
Phe Asp Leu Gly Val Thr Ile Ala His Glu Ile Gly His Ser Phe Gly
            100   105   110
Leu Glu His Asp Gly Ala
        115

<210> 4865
<211> 444
<212> DNA
<213> Homo sapiens

<400> 4865
accggtgaga agccctacaa atgtgaggtc tgcagcaagg ccttctccca gagctctgac
60
ctcatcaaac accagcgcac ccacactggc gagcggccct acaaatgtcc ccgttgcggc
120
aaggccttcg ccgacagctc ttacctgctt cgccaccagc gcactcactc tggccagaag
180
ccctacaagt gcccacattg tggcaaggcc ttcggcgaca gctcctacct cctgcgacac
240
cagcgcaccc acagccacga gcggccctac agctgcaccg agtgcggcaa gtgctatagc
300
cagaactcgt ccctgcgcag ccatcagagg gtgcacaccg gtcagaggcc cttcagctgt
360
ggcatctgcg gcaagagctt ctcccagcgg tcggccctta tcccccatgc ccgcagccac
420
gcccgggaga agcccttcac gcgt
444

<210> 4866

<211> 148
<212> PRT
<213> Homo sapiens

<400> 4866
Thr Gly Glu Lys Pro Tyr Lys Cys Glu Val Cys Ser Lys Ala Phe Ser
 1   5   10   15
Gln Ser Ser Asp Leu Ile Lys His Gln Arg Thr His Thr Gly Glu Arg
            20   25   30
Pro Tyr Lys Cys Pro Arg Cys Gly Lys Ala Phe Ala Asp Ser Ser Tyr
        35   40   45
Leu Leu Arg His Gln Arg Thr His Ser Gly Gln Lys Pro Tyr Lys Cys
    50   55   60
Pro His Cys Gly Lys Ala Phe Gly Asp Ser Ser Tyr Leu Leu Arg His
65   70   75   80
Gln Arg Thr His Ser His Glu Arg Pro Tyr Ser Cys Thr Glu Cys Gly
                85   90   95
Lys Cys Tyr Ser Gln Asn Ser Ser Leu Arg Ser His Gln Arg Val His
            100   105   110
Thr Gly Gln Arg Pro Phe Ser Cys Gly Ile Cys Gly Lys Ser Phe Ser
        115   120   125
Gln Arg Ser Ala Leu Ile Pro His Ala Arg Ser His Ala Arg Glu Lys
    130   135   140
Pro Phe Thr Arg
145

<210> 4867
<211> 391
<212> DNA
<213> Homo sapiens

<400> 4867
ggatcccaga gggagttcta tctggacttg ccccaagcag gttgctaggc agtagcctca
60
tatccttggt gggaggatga gaaggacaaa aagaggcaac cagcctaggg acatcggcct
120
ccttctccac atccccattc tggtaggaaa agtcacccat gccaggatat ccccagccca
180
gagacagccc cagggggtgc tgcctggaga cagccgggat agcttcagtc tcctgaccct
240
gacacgggct gcaccaccag acaatgggca ttttcaggcc agactctggc acaaagagaa
300
ggggcagggc caaggctatg gcccacaagc tcctcagcag ctgagatggg tgcaggaggt
360
agcgctctac tcccatagct ccccactgta t
391

<210> 4868
<211> 125
<212> PRT
<213> Homo sapiens

<400> 4868
Met Gly Val Glu Arg Tyr Leu Leu His Pro Ser Gln Leu Leu Arg Ser

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  1                    5                    10                   15
Leu Trp Ala Ile Ala Leu Ala Leu Pro Leu Leu Phe Val Pro Glu Ser
            20                   25                   30
Gly Leu Lys Met Pro Ile Val Trp Trp Cys Ser Pro Cys Gln Gly Gln
        35                   40                   45
Glu Thr Glu Ala Ile Pro Ala Val Ser Arg Gln His Pro Leu Gly Leu
    50                   55                   60
Ser Leu Gly Trp Gly Tyr Pro Gly Met Gly Asp Phe Ser Tyr Gln Asn
65                   70                   75                   80
Gly Asp Val Glu Lys Glu Ala Asp Val Pro Arg Leu Val Ala Ser Phe
            85                   90                   95
Cys Pro Ser His Pro Pro Thr Lys Asp Met Arg Leu Leu Pro Ser Asn
            100                  105                  110
Leu Leu Gly Ala Ser Pro Asp Arg Thr Pro Ser Gly Ile
        115                  120                  125
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<210> 4869
<211> 418
<212> DNA
<213> Homo sapiens

<400> 4869
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cccgggaaga gggtcgcccg ccataaatgc ggaaacagtt aaatggcgat gggaatagga
60
tgggaactca atggtgttgc tacctttgga tggactcgga ggcagcccag cttcctggga
120
caggactgca cggactgcct ggggaggggt ctttggcccc ccggttcctg caggggggct
180
cggggaggcc ctgtgagcag ttggtcacag gtgggtccca ttcgatgcga tcctgttcct
240
ccccaacagc cctggagaag ggggacgttg cctgctgtgg ctgcggctgt tttcctggcc
300
tgtgagaggc ggggccagag tggccgttgg gaatctgggt gttgcaaggt gaccacaaac
360
agctctctgg gggaggagga ggaaaatgca attgattttc aggagccttc tgaggtcg
418
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<210> 4870
<211> 125
<212> PRT
<213> Homo sapiens

<400> 4870
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Met Ala Met Gly Ile Gly Trp Glu Leu Asn Gly Val Ala Thr Phe Gly
  1                5                    10                   15
Trp Thr Arg Arg Gln Pro Ser Phe Leu Gly Gln Asp Cys Thr Asp Cys
            20                   25                   30
Leu Gly Arg Gly Leu Trp Pro Pro Gly Ser Cys Arg Gly Ala Arg Gly
        35                   40                   45
Gly Pro Val Ser Ser Trp Ser Gln Val Gly Pro Ile Arg Cys Asp Pro
    50                   55                   60
Val Pro Pro Gln Gln Pro Trp Arg Arg Gly Thr Leu Pro Ala Val Ala
65                   70                   75                   80
Ala Ala Val Phe Leu Ala Cys Glu Arg Arg Gly Gln Ser Gly Arg Trp
```

```
                       85                   90                   95
       Glu Ser Gly Cys Cys Lys Val Thr Thr Asn Ser Ser Leu Gly Glu Glu
                   100                  105                 110
       Glu Glu Asn Ala Ile Asp Phe Gln Glu Pro Ser Glu Val
               115                  120                 125
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<210> 4871
<211> 1354
<212> DNA
<213> Homo sapiens

<400> 4871
nnttttttttt  tttttttttt  tttttctaga  atccgcttta  ttatggcacc  tggtgggtct
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ggtgggatct  gagggaggaa  gaggctgcag  tcttgctggg  cagcccctcg  gtcagtccag
120
cagcccctca  ggccatgctg  ctgctcagct  gcatggcaaa  gtcctgcaca  tgctccttca
180
gagtctggcg  ggcatctgcc  tgtgcccgct  tctcccgtgc  ccgctcctgc  tgcagcttgg
240
tcagtctcaa  ccgcagccgc  tgctcccgcc  gcttgcaggc  ctgcagctgg  cgctgggcct
300
tgtcaagggc  atcaagggct  gcctggctcg  ccgcttccag  agtaaggcgc  tgcccacctg
360
gtagctgtgt  tcattctgga  tgtaggctcc  ggcgggtggg  ggcaggcgag  catatacgct
420
gaggggagga  ctggccgtgg  ttcgagaggg  gaggctgcc  gctctggtga  aggctgggcg
480
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540
ctaaggccag  gctccagcct  cccagctggg  gaggccggca  aagtggcagg  tgctgaggcc
600
tcttccacag  gaaagcaggt  gacatcagca  ggtggaggtg  gagaaaatgg  agttgtgggc
660
cctcggccct  cggagcagcg  cttcctgcat  cgtctaagcc  ggctgacttc  aggggggcca
720
ggtgggtaac  tgtgtccttt  ggtcttggtt  gtccggcgca  acttggagaa  agactcaaat
780
atggtgggga  ctgccccctc  ctttagcctg  tgatatccac  tgattcccac  cagctcaaag
840
cagtcctcct  caaagtgttt  ggagcagaag  tagatgtact  cggatgccgg  gtcccacagg
900
ccctggccgc  tggggtccag  ccgctggcag  ttggccagcc  acaagcctcg  cctcgggttg
960
tccttcttgg  gaagtctgtg  gagccacaaa  cccgtgagca  ccaggctgtc  cacagccctg
1020
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1080
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1140
cctcgagaag  aaaagcagtt  tcctcagcgt  catctggcag  gtaacagagt  ggggcgggtc
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caagccggct  agacttcccg  tcctcccctt  cccgactgca  ttcagtcccg  ccgggaccgt
1260
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ctctacgcag ttgcgacccg aggcgagcaa caac
1354

<210> 4872
<211> 90
<212> PRT
<213> Homo sapiens

<400> 4872
Gly Arg Lys Arg Leu Gln Ser Cys Trp Ala Ala Pro Arg Ser Val Gln
 1   5   10   15
Gln Pro Leu Arg Pro Cys Cys Cys Ser Ala Ala Trp Gln Ser Pro Ala
            20   25   30
His Ala Pro Ser Glu Ser Gly Gly His Leu Pro Val Pro Ala Ser Pro
        35   40   45
Val Pro Ala Pro Ala Ala Ala Trp Ser Val Ser Thr Ala Ala Ala Ala
    50   55   60
Pro Ala Ala Cys Arg Pro Ala Ala Gly Ala Gly Pro Cys Gln Gly His
65   70   75   80
Gln Gly Leu Pro Gly Ser Pro Leu Pro Glu
                85   90

<210> 4873
<211> 948
<212> DNA
<213> Homo sapiens

<400> 4873
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agattgcctt gatagaggac tgatgttttt cactgatgag atggtgacca aaagccagcc
120
ccactgtgag ttgaactctt tcgtgttgac cggccactct ccgtgctctg gatgatgtcg
180
gaacacgacc tggccgatgt ggttcaaatt gcagtggaag acctgagccc tgaccaccca
240
ggtacagagc tgtgggacag tgttgttttg gagaatcatg tagtgacaga tgaagacgaa
300
cctgctttga aacgccagcg actagaaatc aattgccagg atccatctat aaagtcattc
360
ctgtattcca tcaaccagac aatctgcttg cggttggata gcattgaagc caaattgcaa
420
gccctggagg ctacttgtaa atccttagaa gaaaagctgg atctggtcac gaacaagcag
480
cacagcccca tccaggttcc catggtggcc ggctcccctc tcaggacaac ccagatgtgc
540
aacaaagtgc gatggtaaga acagaccagg gtgccggggc cttcaggtca cttggggaga
600
agcgcgtcac ctcctcgccc atgcccgcag cttagtggct cagtttgctg gagatgcgca
660
gtgtctgcct cagcagtctc agcagtttct aactaaagct gactttagtt agaccgaaac
720

cgaacacatg gcatcctgcc aggatgacct gaagtcatcc tcacctttcc tttccacata
780
aagccggccc atacaccttt tctttggaac taacccacca gatcttagaa gatgtacacg
840
tgcttctttc ctttttccta ctctacctgg ctagtcttta gatatgtttt tcttcgtatg
900
tggtgtttat acatttcaca tgaatatatc aaactttca ttcaaaaa
948

<210> 4874
<211> 128
<212> PRT
<213> Homo sapiens

<400> 4874
Met Met Ser Glu His Asp Leu Ala Asp Val Val Gln Ile Ala Val Glu
 1   5   10   15
Asp Leu Ser Pro Asp His Pro Gly Thr Glu Leu Trp Asp Ser Val Val
            20   25   30
Leu Glu Asn His Val Val Thr Asp Glu Asp Glu Pro Ala Leu Lys Arg
        35   40   45
Gln Arg Leu Glu Ile Asn Cys Gln Asp Pro Ser Ile Lys Ser Phe Leu
    50   55   60
Tyr Ser Ile Asn Gln Thr Ile Cys Leu Arg Leu Asp Ser Ile Glu Ala
65   70   75   80
Lys Leu Gln Ala Leu Glu Ala Thr Cys Lys Ser Leu Glu Glu Lys Leu
                85   90   95
Asp Leu Val Thr Asn Lys Gln His Ser Pro Ile Gln Val Pro Met Val
            100   105   110
Ala Gly Ser Pro Leu Arg Thr Thr Gln Met Cys Asn Lys Val Arg Trp
            115   120   125

<210> 4875
<211> 1255
<212> DNA
<213> Homo sapiens

<400> 4875
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tcgccggcgc ggtcgttgtc gcattgctct cggccgcact cgcgctgtac gggccgccac
120
tggacgcagt tttagaaaga gcgttttcgc tacgtaaagc acattcgata aaggatatgg
180
aaaatacttt gcagctggtg agaaatatca tacctcctct gtcttccaca aagcacaaag
240
ggcaagatgg aagaataggc gtagttggag gctgtcagga gtacactgga gccccatatt
300
ttgcagcaat ctcagctctc aaagtgggcg cagacttgtc ccacgtgttc tgtgccagtg
360
cggccgcacc tgtgattaag gcctacagcc cggagctgat cgtccaccca gttcttgaca
420
gccccaatgc tgttcatgag gtggagaagt ggctgccccg gctgcatgct cttgtcgtag
480

4053

gacctggctt gggtagagat gatcgtccac ccagttcttg acagccccaa tgctgttcat
540
gaggtggaga agtggctgcc ccggctgcat gctcttgtcg taggaactgg cttgggtaga
600
gatgatgcgc ttctcagaaa tgtccagggc attttggaag tgtcaaaggc cagggacatc
660
cctgttgtca tcgacgcgga tggcctgtgg ctggtcgctc agcagccggc cctcatccat
720
ggctaccgga aggctgtgct cactcccaac cacgtggagt tcagcagact gtatgacgct
780
gtgctcagag gccctatgga cagcgatgac agccatggat ctgtgctaag actcagccaa
840
gccctgggca acgtgacggt ggtccagaaa ggagagcgcg acatcctctc caacggccag
900
caggtgcttg tgtgcagcca ggaaggcagc agccgcaggt gtggagggca aggggacctc
960
ctgtcgggct ccctgggcgt cctggtacac tgggcgctcc ttgctggacc acagaaaaca
1020
aatgggtcca gccctctcct ggtggccgcg tttggcgcct gctctctcac caggcagtgc
1080
aaccaccaag ccttccagaa gcacggtcgc tccaccacca cctccgacat gatcgccgag
1140
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1200
ggcaccttgg acgggggaga gcgtgtgtgt gatgggaaaa tccggaccca cgcgt
1255

<210> 4876
<211> 230
<212> PRT
<213> Homo sapiens

<400> 4876
Leu Ala Trp Val Glu Met Ile Val His Pro Val Leu Asp Ser Pro Asn
 1   5   10   15
Ala Val His Glu Val Glu Lys Trp Leu Pro Arg Leu His Ala Leu Val
            20   25   30
Val Gly Thr Gly Leu Gly Arg Asp Asp Ala Leu Leu Arg Asn Val Gln
        35   40   45
Gly Ile Leu Glu Val Ser Lys Ala Arg Asp Ile Pro Val Val Ile Asp
    50   55   60
Ala Asp Gly Leu Trp Leu Val Ala Gln Gln Pro Ala Leu Ile His Gly
65   70   75   80
Tyr Arg Lys Ala Val Leu Thr Pro Asn His Val Glu Phe Ser Arg Leu
            85   90   95
Tyr Asp Ala Val Leu Arg Gly Pro Met Asp Ser Asp Asp Ser His Gly
            100   105   110
Ser Val Leu Arg Leu Ser Gln Ala Leu Gly Asn Val Thr Val Val Gln
        115   120   125
Lys Gly Glu Arg Asp Ile Leu Ser Asn Gly Gln Gln Val Leu Val Cys
    130   135   140
Ser Gln Glu Gly Ser Ser Arg Arg Cys Gly Gly Gln Gly Asp Leu Leu
145   150   155   160
Ser Gly Ser Leu Gly Val Leu Val His Trp Ala Leu Leu Ala Gly Pro

                                    4054

```
                    165                    170                    175
Gln Lys Thr Asn Gly Ser Ser Pro Leu Leu Val Ala Ala Phe Gly Ala
                180                    185                    190
Cys Ser Leu Thr Arg Gln Cys Asn His Gln Ala Phe Gln Lys His Gly
            195                    200                    205
Arg Ser Thr Thr Thr Ser Asp Met Ile Ala Glu Val Gly Ala Ala Phe
        210                    215                    220
Ser Lys Leu Phe Glu Thr
225                    230
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<210> 4877
<211> 1182
<212> DNA
<213> Homo sapiens
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<400> 4877
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acttgatctt ggtcactgct ccatgccgga gcctgggaag gagcctggcc caggtcgccg
120
gttcaatgaa tgcgtgcgga atgaatgaac gactctagtg aaagagactc caatgacgca
180
ggccgggatt tgcggacacg agccccgcgc cgcgaagcat tctggggatt gtagtttctc
240
cgtgacgcgg tgactcgcag agcactgacg cactctgcgc cggaggaca gagcggcccg
300
gtcgccggca tggtttctcc gtcctgctgc agccggcggg aggcagccag tccaggcgcc
360
cgctagcttc ggcggcgacc cagacgggga aagcggaagg aatgtcgcgt gcaagcaggc
420
agctggtgtg gaagaatggc ggtgagccat tcagtgaagg agcggaccat ctctgagaac
480
agcctgatca tcctactgca gggcctccag ggccgggtaa ccactgtgga cctgcgggat
540
gagagcgtgg cccacggacg catagacaat gtcgatgctt tcatgaacat ccgcctggcc
600
aaagtcacct acacggaccg ttggggggcat caggtcaagc tggatgacct ctttgtgaca
660
ggccgcaatg tccgctacgt ccacatccca gatgacgtga acatcacctc gaccattgag
720
cagcagctgc agattatcca tcgggtgcga aactttggtg gcaagggcca aggccggtgg
780
gaatttcccc caaaaaaact gtaagtgagg ccctcagcaa gccctggccc caactcggag
840
tcctccagtg atctccggag ctagttccct gccctcacac cctgtctggt acccgagaag
900
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960
acagggttcc acctcccaga ctcactctgg gacccagaat cctatatgtg gccttggggt
1020
aggtgacaat ccccctttt gatgatctga atctctgact tattgattat ggaacctgtc
1080
aagtagtttt caactctccc agtgaggata attaaacatg ctcagcctga gccacctcta
1140
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agtgtctcca tttctcatgc agttgtgttc attttctcat ga
1182

<210> 4878
<211> 122
<212> PRT
<213> Homo sapiens

<400> 4878
Met Ala Val Ser His Ser Val Lys Glu Arg Thr Ile Ser Glu Asn Ser
1   5   10   15
Leu Ile Ile Leu Leu Gln Gly Leu Gln Gly Arg Val Thr Thr Val Asp
            20   25   30
Leu Arg Asp Glu Ser Val Ala His Gly Arg Ile Asp Asn Val Asp Ala
        35   40   45
Phe Met Asn Ile Arg Leu Ala Lys Val Thr Tyr Thr Asp Arg Trp Gly
    50   55   60
His Gln Val Lys Leu Asp Asp Leu Phe Val Thr Gly Arg Asn Val Arg
65   70   75   80
Tyr Val His Ile Pro Asp Asp Val Asn Ile Thr Ser Thr Ile Glu Gln
                85   90   95
Gln Leu Gln Ile Ile His Arg Val Arg Asn Phe Gly Gly Lys Gly Gln
            100   105   110
Gly Arg Trp Glu Phe Pro Pro Lys Lys Leu
        115   120

<210> 4879
<211> 1941
<212> DNA
<213> Homo sapiens

<400> 4879
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120
gctgggcttg gaggatgcct ctccgaccca ctgatgctgg gggcgcagga ctcggtcaag
180
ggaggggcaa gaggaggagg agagcctgcc gttccaactt gcccatcaga gacccggaca
240
cggcctggtg tgtggcttgc tgcctgggag ggatgcacag gcctcctga gggacaggat
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360
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420
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480
ccgtggtaga atgagctgga gcacgctcta agagagatgc ctgcttccta aagatctaca
540
gcaatctggg acgtggttca agttcaagac ttgaaggaag caaagacgcc ctgcatggtt
600
acaatggctc aggtgtcagg ggaggccgga ggttttccag catttgcctc atgccagcac
660

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ctttgaaccg gtctcttaga agaagacaca catcctgggt gtacagtggt gaaatgggga
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gtgggtgccc attctgaaaa acgaggcatt cctgctcatt ccctctgctt agctggtggg
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840
aaatatatct tcaggttatt ttcttactgt tgcttcagat ctaatgtaaa aggcagatgt
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960
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1200
gtttgcctgc tcagagtggc ccctcagaac aacagggctg gccttggaaa aaccccaaaa
1260
caggactgtg gtgacaactc tggtcaggtg tgatttgaca tgagggccgg aggcggttgc
1320
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1380
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1440
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tccgggcccc acgtggctcc tgtgctctag atcatggtga ctcccccgcc ctgtggttgg
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1740
ccctttaatg ggattgaaag cacttttacc acatggagaa atatattttt aatttgtgat
1800
gcttttctac aaggtccact atttctgagt ttaatgtgtt tccaacactt aaggagactc
1860
taatgaaagc tgatgaattt tcttttctgt ccaaacaagt aaaataaaaa taaaagtcta
1920
tttagatgtt gaaaaaaaaa a
1941
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<210> 4880
<211> 202
<212> PRT
<213> Homo sapiens

<400> 4880
Met Val Arg Ser Ala His His Ser Gly Thr Glu Ala Ser Leu Glu Thr
 1               5                   10                  15
His Lys Pro Gly Leu Gly Lys Cys Pro Asp Leu Pro Gly Gly His Thr
```

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                    20                      25                      30
Ser Leu Ala Ala Ser Ala Gly His Ala Ala Ser Pro Val Leu Pro Ser
            35                      40                      45
Ala Thr Ala Ser Gly Pro His Val Lys Ser His Leu Thr Arg Val Val
        50                      55                      60
Thr Thr Val Leu Phe Trp Gly Phe Ser Lys Ala Ser Pro Val Val Leu
65                      70                      75                      80
Arg Gly His Ser Glu Gln Ala Asn Thr Ala Arg Val Thr His Tyr Thr
                    85                      90                      95
Gln Arg Lys Asp Asn Glu Gln Met Ala Ile Val Glu Asn Ser Val Val
                100                     105                     110
Cys Phe Ser Asn Ala Thr Tyr Phe Ser Arg Gln Val Ile Leu Pro Met
            115                     120                     125
Met Thr Ser Ala Thr Lys Leu Arg Ala Arg Gly Leu Pro Met Arg Leu
            130                     135                     140
Val Glu Ser Asn His Val Cys Ser Glu Ala Ser Gly Pro Ser Arg Pro
145                     150                     155                     160
Cys His Arg Pro Glu His Arg Thr Val Ile Met Gln Arg Ala Val Thr
                165                     170                     175
Glu Ala Gly Val Ser Val Gly Gly Gly Glu Glu Gly Thr Ser Ala Phe
                180                     185                     190
Tyr Ile Arg Ser Glu Ala Thr Val Arg Lys
            195                     200
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<210> 4881
<211> 1333
<212> DNA
<213> Homo sapiens

<400> 4881

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nntttttttt ttacatgtga gtcattcttt attagggagg aagcaagcag ggaagccaca
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ggggtagaga acagggtcac ctctccactc ccgcccctcc catttctccc ctcccaacct
120
ctaggttttg gatacatgac gcagcaactg atgaacctgg caggaggcgc agtggtgctg
180
gccttggagg gtggccatga cctcacagcc atctgtgacg cctctgaggc ctgtgtggct
240
gctcttctgg gtaacagggt gagccgtctc cctcccccat ccatgcttct gtcaggcagg
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360
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480
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600
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gaaggatctt ggtggtaccc tgccccaccg tggccagatc ctagggcttc cggtgccagc
720
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caggtgacct gctgttggtc tggagtaaga ttcctgtgag tgacccaggc agcaatggta
780
aatactgggg ctgcatgcag cgcctggcct cctgtccaga ctcctgggtg cctagagtgc
840
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960
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1020
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1080
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1260
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1320
ccctgggtct aga
1333

<210> 4882
<211> 100
<212> PRT
<213> Homo sapiens

<400> 4882
Xaa Phe Phe Phe Thr Cys Glu Ser Phe Phe Ile Arg Glu Glu Ala Ser
 1   5   10   15
Arg Glu Ala Thr Gly Val Glu Asn Arg Val Thr Ser Pro Leu Pro Pro
            20   25   30
Leu Pro Phe Leu Pro Ser Gln Pro Leu Gly Phe Gly Tyr Met Thr Gln
            35   40   45
Gln Leu Met Asn Leu Ala Gly Gly Ala Val Val Leu Ala Leu Glu Gly
        50   55   60
Gly His Asp Leu Thr Ala Ile Cys Asp Ala Ser Glu Ala Cys Val Ala
65   70   75   80
Ala Leu Leu Gly Asn Arg Val Ser Arg Leu Pro Pro Pro Ser Met Leu
                85   90   95
Leu Ser Gly Arg
            100

<210> 4883
<211> 1371
<212> DNA
<213> Homo sapiens

<400> 4883
nnagatctaa cagagaacct ggactgtctc ctatcatgat tcccgggaaa tatcgctctg
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tttctggccg ggctgcgaac aacgtgaact gcgggcttca tctggttatt caaacatcat
120

cgcttcctga aaaaaacaaa acaaaagctg accgtatgtc ctatcatcaa tggggaagac
180
caccttcgtt tgttgaactt tcaacacaat tttataactc ggatacaaaa tatttctaat
240
ctacagaagt taatatcgtt ggatttatat gataaccaga ttgaagaaat tagtgggctt
300
tcgactctga gatgtcttcg tgtccttctg ttggggaaaa acagaatcaa gaaaatctca
360
aatctggaga atctaaaaag cttagatgtc ttggatcttc atggaaatca gattaccaaa
420
attgaaaata ttaatcattt gtgtgagttg agagttttaa atcttgccag gaactttta
480
agtcatgttg ataatcttaa tgggctggat tcactaactg aacttaactt gcgacacaat
540
caaatcactt tcgtgagaga tgtggataat ttgccctgcc tccaacatct ctttctcagc
600
tttaacaata tatctagttt tgacagtgtt tcctgccttg ctgactcttc ttccctctcg
660
gacatcacct ttgatggcaa tcccatagct caagagtcat ggtacaaaca cactgtcctt
720
cagaatatga tgcagctgcg ccagctagat atgaagagaa tcacggaaga agaaaggcgt
780
atggcatctg ttttagccaa aaaagaggaa gagaagaagc gggaaagtca taaacaatct
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900
caacgagtag ccaatattgc tacaaatgaa gatagaaaag attctgactc tcctcaggac
960
ccctgtcaga ttgatggaag caccctctct gcattcccag aggaaacagg gcctctagac
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1140
agtgttcaaa cagcaggaat gatcacaaca gtctccttca ctttcataga atttgatgaa
1200
atcgtccaag tgcttcctaa actgaagatt aagtttccta attctctgca ccttaaattc
1260
aaggaaacaa atcttgtaat gcagcaattt aacgcactag cccaactccg tcggtattga
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ccagttggac aattgatcct caaggaaatc cagttggtcc attttaacac t
1371

<210> 4884<211> 410
<212> PRT
<213> Homo sapiens

<400> 4884
Thr Ala Gly Phe Ile Trp Leu Phe Lys His His Arg Phe Leu Lys Lys
1   5   10   15
Thr Lys Gln Lys Leu Thr Val Cys Pro Ile Ile Asn Gly Glu Asp His
            20   25   30
Leu Arg Leu Leu Asn Phe Gln His Asn Phe Ile Thr Arg Ile Gln Asn
        35   40   45

```
Ile Ser Asn Leu Gln Lys Leu Ile Ser Leu Asp Leu Tyr Asp Asn Gln
    50              55              60
Ile Glu Glu Ile Ser Gly Leu Ser Thr Leu Arg Cys Leu Arg Val Leu
65              70              75              80
Leu Leu Gly Lys Asn Arg Ile Lys Lys Ile Ser Asn Leu Glu Asn Leu
            85              90              95
Lys Ser Leu Asp Val Leu Asp Leu His Gly Asn Gln Ile Thr Lys Ile
            100             105             110
Glu Asn Ile Asn His Leu Cys Glu Leu Arg Val Leu Asn Leu Ala Arg
        115             120             125
Asn Phe Leu Ser His Val Asp Asn Leu Asn Gly Leu Asp Ser Leu Thr
    130             135             140
Glu Leu Asn Leu Arg His Asn Gln Ile Thr Phe Val Arg Asp Val Asp
145             150             155             160
Asn Leu Pro Cys Leu Gln His Leu Phe Leu Ser Phe Asn Asn Ile Ser
            165             170             175
Ser Phe Asp Ser Val Ser Cys Leu Ala Asp Ser Ser Ser Leu Ser Asp
            180             185             190
Ile Thr Phe Asp Gly Asn Pro Ile Ala Gln Glu Ser Trp Tyr Lys His
        195             200             205
Thr Val Leu Gln Asn Met Met Gln Leu Arg Gln Leu Asp Met Lys Arg
    210             215             220
Ile Thr Glu Glu Glu Arg Arg Met Ala Ser Val Leu Ala Lys Lys Glu
225             230             235             240
Glu Glu Lys Lys Arg Glu Ser His Lys Gln Ser Leu Leu Lys Glu Lys
            245             250             255
Lys Arg Leu Thr Ile Asn Asn Val Ala Arg Gln Trp Asp Leu Gln Gln
            260             265             270
Arg Val Ala Asn Ile Ala Thr Asn Glu Asp Arg Lys Asp Ser Asp Ser
    275             280             285
Pro Gln Asp Pro Cys Gln Ile Asp Gly Ser Thr Leu Ser Ala Phe Pro
    290             295             300
Glu Glu Thr Gly Pro Leu Asp Ser Gly Leu Asn Asn Ala Leu Gln Gly
305             310             315             320
Leu Ser Val Ile Asp Thr Tyr Leu Val Glu Val Asp Gly Asp Thr Leu
            325             330             335
Ser Leu Tyr Gly Ser Gly Ala Leu Glu Ser Leu Asp Arg Asn Trp Ser
        340             345             350
Val Gln Thr Ala Gly Met Ile Thr Thr Val Ser Phe Thr Phe Ile Glu
    355             360             365
Phe Asp Glu Ile Val Gln Val Leu Pro Lys Leu Lys Ile Lys Phe Pro
    370             375             380
Asn Ser Leu His Leu Lys Phe Lys Glu Thr Asn Leu Val Met Gln Gln
385             390             395             400
Phe Asn Ala Leu Ala Gln Leu Arg Arg Tyr
            405             410
```

<210> 4885
<211> 489
<212> DNA
<213> Homo sapiens

<400> 4885

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gtgtttcagg gctttatgtc attcaaggat gtggctgtga acttcactag gnaagaatgg
120
agagaactgg accttgctca gagagtcttg tacagggatg taatgctgga gaactatagg
180
aacctggtct ccttggtagg atttccattt tccaaacctg gtatcatctc ctagttggaa
240
gaagtggtaa gcccacgaac acaaatgcag gagggagagg tgccaagaag cagcggtaca
300
cgagaaagac agggctggag accagtttgc tgatagtgac ccccaaccag aaaagttcat
360
tgggctgcac cctccagtag aactggacct gaggcagcta ggaataggat gcatgtttct
420
gaccctggcc aggatcagaa agaaggaaac ctctcctgag ggtcttcagc agtggaagag
480
ggcagtcag
489

<210> 4886
<211> 77
<212> PRT
<213> Homo sapiens

<400> 4886
Leu Lys Lys Glu Asn Met Ala Ala Leu Cys Arg Thr Ala Glu Ser Gln
 1   5   10   15
Asn Pro Met Gln Val Phe Gln Gly Phe Met Ser Phe Lys Asp Val Ala
            20   25   30
Val Asn Phe Thr Arg Xaa Glu Trp Arg Glu Leu Asp Leu Ala Gln Arg
        35   40   45
Val Leu Tyr Arg Asp Val Met Leu Glu Asn Tyr Arg Asn Leu Val Ser
    50   55   60
Leu Val Gly Phe Pro Phe Ser Lys Pro Gly Ile Ile Ser
65   70   75

<210> 4887
<211> 2271
<212> DNA
<213> Homo sapiens

<400> 4887
nntttttttt tttttttttc aaagggacac ctgcacccc atgtttattg cagcaatatt
60
cacaatagcc ttgtagtttt agcgcttaga ggcatttaaa cagcctctct cctccagact
120
acttcactgt agtttattat ccctgaccct ccacaatgtg attaccaacc gctaggatga
180
gttgcatctt attataaagt agcaaattac aagattgtaa cattagactt tttaagaaaa
240
tccagtcagc ttttatacta atccatctta atttctaggt tactcagaat tccaggtatt
300
ctgatttgga ctcacatctc gtattgtatt gcctgtattt aactaggaag ttactgccaa
360

```
cagcatctat ctctattaaa tgtagaggaa ttgacaaaag aggggaaaga aagttgttag
420
gtaatagaac tgcttcagaa atagggctat tcatgtttga agtgtttctc cttcgttttt
480
cagggcatct cattgggaga tattcctctt ccaggcagta tcagtgatgg catgaattct
540
tcagcacatt atcatgtaaa cttcagccag gctataagtc aggatgtgaa tcttcatgag
600
gccatcttgc tttgtcccaa caatacattt agaagagatc caacagcaag gacttcacag
660
tcacaagaac catttctgca gttaaattct cataccacca atcctgagca aacccttcct
720
ggaactaatt tgacaggatt tctttcaccg gttgacaatc atatgaggaa tctaacaagc
780
caagacctac tgtatgacct tgacataaat atatttgatg agataaactt aatgtcattg
840
gccacagaag acaactttga tccaatcgat gtttctcagc tttttgatga accagattct
900
gattctggcc tttctttaga ttcaagtcac aataatacct ctgtcatcaa gtctaattcc
960
tctcactctg tgtgtgatga aggtgctata ggttattgca ctgaccatga atctagttcc
1020
catcatgact tagaaggtgc tgtaggtggc tactacccag aacccagtaa gctttgtcac
1080
ttggatcaaa gtgattctga tttccatgga gatcttacat ttcaacacgt atttcataac
1140
cacacttacc acttacagcc aactgcacca gaatctactt ctgacncttt tccgnntgct
1200
gggaagtcac agaagataag gagtagatac cttgaagacc cagatagaac cttaagccgt
1260
gatgaccagc gtgctaaagc tttgcatatc ccttttttctg tagatgaaat tgtcggcatg
1320
cctgttgatt ctttcaatag catgttaagt agatattatc tgacagacct acaagtctca
1380
cttatccgtg acatcagacg aagagggaaa aataaagttg ctgcgcagaa ctgtcgtaaa
1440
cgcaaattgg acataatttt gaatttagaa gatgatgtat gtaacttgca agcaaagaag
1500
gaaactctta agagagagca agcacaatgt aacaaagcta ttaacataat gaaacagaaa
1560
ctgcatgacc tttatcatga tattttttagt agattaagag atgaccaagg taggccagtc
1620
aatcccaacc actatgctct ccagtgtacc catgatggaa gtatcttgat agtacccaaa
1680
gaactggtgg cctcaggcca caaaaaggaa acccaaaagg gaaagagaaa gtgagaagaa
1740
actgaagatg gactctatta tgtgaagtag taatgttcag aaactgatta tttggatcag
1800
aaaccattga aactgcttca agaattgtat ctttaagtac tgctacttga ataactcagt
1860
taacgctgtt ttgaagctta catggacaaa tgtttaggac ttcaagatca cacttgtggg
1920
caatctgggg gagccacaac ttttcatgaa gtgcattgta tacaaaattc atagttatgt
1980
```

```
ccaaagaata ggttaacatg aaaacccagt aagactttcc atcttggcag ccatcctttt
2040
taagagtaag ttggttactt caaaaagagc aaacactggg gatcaaatta ttttaagagg
2100
tatttcagtt ttaaatgcaa aatagcctta ttttcattta gtttgttagc actatagtga
2160
gcttttcaaa cactatttta atctttatat ttaacttata aattttgctt tctatggaaa
2220
taaattttgt atttgtatta aaaattaact tttccctttt aaaaaaaaaa a
2271
```

```
<210> 4888
<211> 429
<212> PRT
<213> Homo sapiens
```

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<400> 4888
Gly Tyr Ser Cys Leu Lys Cys Phe Ser Phe Val Phe Gln Gly Ile Ser
1               5                   10                  15
Leu Gly Asp Ile Pro Leu Pro Gly Ser Ile Ser Asp Gly Met Asn Ser
                20              25                  30
Ser Ala His Tyr His Val Asn Phe Ser Gln Ala Ile Ser Gln Asp Val
            35                  40                  45
Asn Leu His Glu Ala Ile Leu Leu Cys_Pro Asn Asn Thr Phe Arg Arg
        50                  55                  60
Asp Pro Thr Ala Arg Thr Ser Gln Ser Gln Glu Pro Phe Leu Gln Leu
65                  70                  75                  80
Asn Ser His Thr Thr Asn Pro Glu Gln Thr Leu Pro Gly Thr Asn Leu
                85                  90                  95
Thr Gly Phe Leu Ser Pro Val Asp Asn His Met Arg Asn Leu Thr Ser
            100                 105                 110
Gln Asp Leu Leu Tyr Asp Leu Asp Ile Asn Ile Phe Asp Glu Ile Asn
        115                 120                 125
Leu Met Ser Leu Ala Thr Glu Asp Asn Phe Asp Pro Ile Asp Val Ser
    130                 135     .               140
Gln Leu Phe Asp Glu Pro Asp Ser Asp Ser Gly Leu Ser Leu Asp Ser
145                 150                 155                 160
Ser His Asn Asn Thr Ser Val Ile Lys Ser Asn Ser Ser His Ser Val
                165                 170                 175
Cys Asp Glu Gly Ala Ile Gly Tyr Cys Thr Asp His Glu Ser Ser Ser
            180                 185                 190
His His Asp Leu Glu Gly Ala Val Gly Gly Tyr Tyr Pro Glu Pro Ser
        195                 200                 205
Lys Leu Cys His Leu Asp Gln Ser Asp Ser Asp Phe His Gly Asp Leu
    210                 215                 220
Thr Phe Gln His Val Phe His Asn His Thr Tyr His Leu Gln Pro Thr
225                 230                 235                 240
Ala Pro Glu Ser Thr Ser Asp Xaa Phe Pro Xaa Ala Gly Lys Ser Gln
                245                 250                 255
Lys Ile Arg Ser Arg Tyr Leu Glu Asp Pro Asp Arg Thr Leu Ser Arg
                260                 265                 270
Asp Asp Gln Arg Ala Lys Ala Leu His Ile Pro Phe Ser Val Asp Glu
        275                 280                 285
Ile Val Gly Met Pro Val Asp Ser Phe Asn Ser Met Leu Ser Arg Tyr
```

4064

```
     290                    295                    300
Tyr Leu Thr Asp Leu Gln Val Ser Leu Ile Arg Asp Ile Arg Arg Arg
305                    310                    315                    320
Gly Lys Asn Lys Val Ala Ala Gln Asn Cys Arg Lys Arg Lys Leu Asp
                325                    ·330                    335
Ile Ile Leu Asn Leu Glu Asp Asp Val Cys Asn Leu Gln Ala Lys Lys
            340                    345                    350
Glu Thr Leu Lys Arg Glu Gln Ala Gln Cys Asn Lys Ala Ile Asn Ile
        355                    360                    365
Met Lys Gln Lys Leu His Asp Leu Tyr His Asp Ile Phe Ser Arg Leu
    370                    375                    380
Arg Asp Asp Gln Gly Arg Pro Val Asn Pro Asn His Tyr Ala Leu Gln
385                    390                    395                    400
Cys Thr His Asp Gly Ser Ile Leu Ile Val Pro Lys Glu Leu Val Ala
                405                    410                    415
Ser Gly His Lys Lys Glu Thr Gln Lys Gly Lys Arg Lys
                420                    425
```

<210> 4889
<211> 619
<212> DNA
<213> Homo sapiens

<400> 4889
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nntgttttc actttattat acaaaaaagg gaaaacaaaa cttccacagt tggctttaag
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cataggcaga cacctctaag ccactccctc ccacctccca tgatacaaat tcaagttgtg
120
gtggttgttg aatcctacaa aacactcctt aaatattaga aaagaagtta ggagctccca
180
gcacatttct tgaagcccag gttctgagcc tggggtggcc aggcttggcc tctcagatga
240
acagggaga cctttccat caaatacaag ctttaagctt cacaccatct tgcctgcctt
300
tccgccttcc tgctggacaa tggagaccag cagctcggat gcatgtgact ctggcagagg
360
gagcctggtc tgggaagcat ccgagaatgg cttcagcaca ctcccctaa tggaatcaga
420
gactgggcaa aacagaggat gtggagaacg gggcagcctc agcctgctcc caccagggtc
480
aacatctccc ggccctcacc gaccttttt ccagattcac aacaaactga tgtgggctct
540
aggacagacc cctttacaca cacacacaca cactcacact cttttgcaca catccacagc
600
tgcacccatg ctatgtaca
619
```

<210> 4890
<211> 90
<212> PRT
<213> Homo sapiens

<400> 4890
```
Leu Trp Gln Arg Glu Pro Gly Leu Gly Ser Ile Arg Glu Trp Leu Gln
```

```
 1                    5                    10                   15
His Thr Pro Pro Asn Gly Ile Arg Asp Trp Ala Lys Gln Arg Met Trp
           20              25              30
Arg Thr Gly Gln Pro Gln Pro Ala Pro Thr Arg Val Asn Ile Ser Arg
           35              40              45
Pro Ser Pro Thr Leu Phe Pro Asp Ser Gln Gln Thr Asp Val Gly Ser
       50              55              60
Arg Thr Asp Pro Phe Thr His Thr His Thr His Ser His Ser Phe Ala
65              70              75              80
His Ile His Ser Cys Thr His Ala Met Tyr
               85              90
```

<210> 4891
<211> 1998
<212> DNA
<213> Homo sapiens

<400> 4891

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60
cttgacaatt ctcatccatc acacagccaa caatgcacag gcccaccaga acttttggac
120
aatcaccgcc ccgccctccc tcaatgtctc cgaggcaggt gcggccacag ccggtgctgc
180
agcatttatg cccctgggga caggatgcat ccccatcaca cagctcctca cacggaaggg
240
ggtcagcggg acattcacca ccaaactcct taggaatgtc tcggcagatc cgaccacagc
300
ctgtggtgca gcacttctgt tcagccggac acaattcatc gccctggcac agctctttgc
360
atgggttctt atcgggaggg cattctccct cttttgaagg cctctaagtg taactgtcct
420
gggcgaggcg cggcggttcg gttcccatgg taaccccgca gctccagcgt cgcgcttccg
480
ggcggacgag cagcgcgctc cagtgacgtc acggcgccac tttccggccg gtgacagagt
540
ccagcggagt tgtggggggcc ggggggcgcca tgggagccac tggcgacgcc gagcagccgc
600
ggggacctag cggggccgag aggggcggct tggagctggg ggatgcgggc gcagcggggc
660
agctggttct tacggtgagg gcgcccccga acccttggaa cataatgata aagcaccggc
720
aggtgcagcg gaggggccgc cgctcacaga tgacaacaag tttcacagat cctgccatct
780
ccatggatct cctccgagct gtcctgcagc ccagcatcaa cgaggagatc cagactgtct
840
tcaacaagta cataaagttc ttccagaagg cagcactgaa cgtgcgagac aatgttgggg
900
aggaggtgga cgcagagcag ctgatccagg aagcctgtcg gagctgcctg gagcaggcta
960
naactgctct tttcagatgg agaaaaagta atacccagat tgacccatga gcttccagga
1020
ataaagcgtg gccgtcaggc agaagaagaa tgtgcccatc gaggaagccc ccttcctaaa
1080
```

aagaggaaag gacggcctcc tggacacatc ctgtcaagcg accgggcagc cgccggcatg
1140

gtatggaaac caaaatcctg tgaaccaatt cgccgggaag gccccaagtg ggacccagct
1200

cgcctgaatg aatctaccac ctttgtgttg ggatctcgag ccaacaaagc cctggggatg
1260

gggggcacca gaggaagaat ctacatcaag cacccacacc tctttaagta tgcagctgac
1320

ccccaggata agcactggct ggctgagcag catcacatgc gggcaacagg gggcaagatg
1380

gcctacctcc tcatcgagga ggacatccgg gaccttgcgg ccagtgatga ttacagagga
1440

tgcctggatc tgaagctaga ggaattgaaa tcctttgtcc taccctcctg gatggtggag
1500

aagatgagaa agtatatgga gacactacgg acagagaatg agcatcgtgc tgttgaagca
1560

cctccacaga cctgaggccg ggtcccctgg ccacacttgg cagccctcct ccaaagccct
1620

cttcctcacg tggctgaggc caccgctggg actgctccta gatggatctc agcggcatta
1680

agctgtgcct gagcgagttt gtagtgactc actgcacagc accccagac tagcatgtgg
1740

ttctatattt gtaaagttat tgggataaga aacaattaaa cagtttgtag taaacacaga
1800

tggtgaacct gctgtgccct ctaccttgtg ggaattgaca gaacatcaag ggctctagaa
1860

gtgggtgtag gaaaaaagga cgagataacc ctcacccata acagtataga gccaggcttg
1920

ataagaccaa cctgggagca ccatgtaccc tgcccgtctt ccctttgccc atttgtagtt
1980

tccttaccca gctaatgt
1998

<210> 4892
<211> 216
<212> PRT
<213> Homo sapiens

<400> 4892
Ser Arg Lys Pro Val Gly Ala Ala Trp Ser Arg Leu Xaa Leu Leu Phe
1   5   10   15
Ser Asp Gly Glu Lys Val Ile Pro Arg Leu Thr His Glu Leu Pro Gly
            20   25   30
Ile Lys Arg Gly Arg Gln Ala Glu Glu Glu Cys Ala His Arg Gly Ser
        35   40   45
Pro Leu Pro Lys Lys Arg Lys Gly Arg Pro Pro Gly His Ile Leu Ser
    50   55   60
Ser Asp Arg Ala Ala Ala Gly Met Val Trp Lys Pro Lys Ser Cys Glu
65   70   75   80
Pro Ile Arg Arg Glu Gly Pro Lys Trp Asp Pro Ala Arg Leu Asn Glu
                85   90   95
Ser Thr Thr Phe Val Leu Gly Ser Arg Ala Asn Lys Ala Leu Gly Met
            100   105   110
Gly Gly Thr Arg Gly Arg Ile Tyr Ile Lys His Pro His Leu Phe Lys

```
        115                    120                    125
Tyr Ala Ala Asp Pro Gln Asp Lys His Trp Leu Ala Glu Gln His His
        130                    135                    140
Met Arg Ala Thr Gly Gly Lys Met Ala Tyr Leu Leu Ile Glu Glu Asp
145                    150                    155                    160
Ile Arg Asp Leu Ala Ala Ser Asp Asp Tyr Arg Gly Cys Leu Asp Leu
                165                    170                    175
Lys Leu Glu Glu Leu Lys Ser Phe Val Leu Pro Ser Trp Met Val Glu
            180                    185                    190
Lys Met Arg Lys Tyr Met Glu Thr Leu Arg Thr Glu Asn Glu His Arg
        195                    200                    205
Ala Val Glu Ala Pro Pro Gln Thr
        210                    215
```

<210> 4893
<211> 5212
<212> DNA
<213> Homo sapiens

<400> 4893

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120
cagctcagag gtgttcagaa cccttgccca tctgccagag ccagaccccg gcacaagtcc
180
ctcaacataa aggacaagat atcagaatgg aagggaaga aagaggtgcc cactcctgca
240
cccagcagga gagcagacgg acaggaggat tatctgccgt cctctacggt ggagaggagg
300
agtagtgatg gggtgagaac tcaggtcaca gaggctaaga atggaatgag gccaggaaca
360
gagagcacag agaaggagag gaataaagga gcagtgaacg tcgggggaca ggacccagag
420
ccggggcaag acctaagcca gccagaacgg gaagtggatc ctagctgggg ccgaggccga
480
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540
aagaaactcg agcaggcttt gaaggatggg tcggcagggc tggatcccca gttaccaggg
600
acttgttact ccccacactg ccctcctgac aaggcagagg cagggtccac ccttcctgag
660
aacctgggag gcgggagtgg ctcagaagtc agccagaggg tccacccctc ggacctggaa
720
ggcagggagc ccacccctga gcttgtggag acaggaaag gttcatgcag aaggccctgg
780
gaccggagcc ttgagaacgt gtataggggc tcggagggtt cccccacaaa gcccttcatc
840
aaccctctgc caaaaccccg gagaacgttc aaacatgccg agaagggga caaagatggg
900
aagcctggca tcggcttcag gaaagagaaa agaaatctgc tcctctgcc ctctctacct
960
cccccgcctc tgccctcctc tcccccacct tcctctgtga acagaagact gtggaccggg
1020
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```
agacagaaat ccagtgcaga ccacagaaag tcctatgagt ttgaagattt actgcagtct
1080
tcctctgaga gcagcagggt ggactggtac gcgcagacta agctggggct gacacgcact
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ttatcggagg agaacgtcta tgaagacatt ctagatccgc caatgaagga gaacccttat
1200
gaggacatcg agttacatgg tcgctgcctg ggaaagaagn ntgtgtcttg aattttcctg
1260
cttctcccac ctncttccat ccctgacaca ctcaccaagc agtcattgtc caaacctgct
1320
tttttccgac aaaattcaga gaggaggaac ttcaagctgc tggacactag gaagctgagt
1380
cgggatggaa ctgggtcccc ttccaaaatc agccctccct ccactcccag cagccctgat
1440
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1620
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1800
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1860
gaagctgagg accaactgaa ggccattccc cagttctgtt ttcccgatgc caaggattgg
1920
gttcctgtcc agcagttcac cagtgaaaca ttctcgtttg tcttaactgg agaagatggg
1980
agcagaaggt tcggttactg ccgaagactg ctgcctggag gcaaagggaa gcgccttcct
2040
gaagtttact gcattgtgag ccgcctggga tgcttcagcc tcttttcaag gatcttggat
2100
gaggtggaaa aaagacgagg catctctcct gccctggttc agccactcat gagaagtgtc
2160
atggaagccc ctttcccagc cctgggcaaa accatccttg tcaagaactt cctgccaggt
2220
tcaggaactg aggtgatcga actgtgccgc ccgctggact cccggctcga gcacgtggac
2280
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2340
cttctggaga ggagggtcat cttcattgca gacaagctca gcatcctgtc caagtgctgc
2400
cacgcgatgg tggcgctgat ctaccccttc gcctggcagc acacctacat cccggtgctg
2460
ccacccgcca tggtcgacat cgtgtgctcg ccgacgccct tcctcatcgg gctgctctcc
2520
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2580
aacagccggt tcctcagaca gatggacgat gaggactcca tcctgccccg gaagcttcag
2640
```

gtggccctgg aacacattct ggaacagagg aacgagctgg cttgtgagca ggacgaaggg
2700

cccctagacg gcaggcacgg tccagagtcc agccccttga acgaggtggt gtctgaagcc
2760

tttgtccgct tcttcgtgga gattgtggga cactactctt tgttcctgac gtcgggcgag
2820

cgtgaggaga gaaccctgca gcgggaggcc ttccgcaaag ctgtctcctc caagagcctc
2880

cgccacttcc tggaggtctt catggagact cagatgtttc ggggcttcat ccaggagcgg
2940

gagctgcgcc ggcaggatgc caaaggtctg tttgaggtcc gagcccaaga gtatctggaa
3000

acactcccca gtggagagca cagcggtgtc aataagttcc tgaagggact aggcaataaa
3060

atgaaatttc tccacaagaa ataactctca gcctcaaggg aaaacttcct cctagtgcag
3120

ccctatgctt taaaaacagt tcctggtggc ctttctgaaa ggctgggtcc caggttgtca
3180

cggtgcggaa ctggaggccg cggtggcttc tggccgaggc tgggctcttc cctggatgag
3240

gacctgggag ccgcctggga ggacagcccc agaaagggag cccgagacca ggcgtgtcgc
3300

cgacatgcaa atgggttgtt ttggtggttg ggtttttttt tttatcttag atattaaaag
3360

taagaaaaat gtgtgggttt tctgtttatt atgccaaggc caagaggagc ctgtcctgcc
3420

ctacacgttc ccctcgttcg tcccatccgg ccgctcagca atggagctaa gaggagtggt
3480

gatgggcaac agaaatgagg tgctcctcgg agcgggactg acgacacatg aggactgtga
3540

ggggaggagg cggagccggt gcctcgggtt cagggagtga ggcctcctag tgaaaggctg
3600

ggcccttgcc ctagagtgga ggctagggag gaacgggagc tgtagacgga tgtggcttcc
3660

cagacacgct gctcttccag aagggacagt gatgccacct ggtggccgag gccatggacg
3720

tctctcttcc caaatggacc tgactcttct tgactgcctt gttctcttag aagaagccat
3780

ggaactgtcc actgcctgag tagtccctgg cttttagagg cacacacaca aaaagaggtc
3840

agtaaactgt tctaggggtc ttcaagttta cgacactgct cacggcccac cttccaacac
3900

atagccacaa ctttgacccc gttcccatct cattccaggg gcccagagca gcattaatgc
3960

aatagtggat gtgcactgcc tgtacacggt gggggcggg gggacctttt gcggctgatg
4020

gtaacaagat ggagggtgag aacgctgggg cggcgtcatg agccgtgtgc agccagagag
4080

gcagcttgcg ttttctggac cagaagcagg gagggtgtgg agaaggccaa aaacctcagg
4140

gcgacctaag agctgtcctg cagcggggac agtggggaca gcagggacag cggggaggca
4200

ggaaaagccc cgaacacagc tgaggcaggt tctcagagca agcctcaggg ccactaccag
4260

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gtgacccctg ccctcagctc tcaccagcga ccctcacaga aacacaaaag ggaggggcgc
4320
cgacctcaac aatgcccag aggggccata ctgcctggca ggggttctca acctttaggg
4380
agcgggagca aggggccttc cgaggataaa tagaaatgag gaaaatgagg ggaggtgacc
4440
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4500
ctttggtgtg tccattactt tttcagaggt gaagatccac agtttacatc aaattctcaa
4560
agatgctccc agaatggtag aaaccaggct gtgcataaaa attaacctgc ctggctgggc
4620
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4680
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4740
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4800
gctgaggcag aagaatcgct tgaactgggg aggagaaggt tgcagtgagc cgagatcatg
4860
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4920
tgtgtgtggg tggggactag ggggatgcct gaatgagaat ccctgaatcc ttgagtgtgg
4980
gggttcagga atatgtatct aacaagctcc ttggattagt caagtttgtg tgggggctca
5040
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5100
tgtatattgc ccagaaaggg acacttttttg gaatatactt tcttttttttt aacttatttc
5160
gcattatatt gtttacttaa taactccaag caaataaatg tacatctttta tc
5212
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<210> 4894
<211> 399
<212> PRT
<213> Homo sapiens

<400> 4894
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Met Asp Met Phe Ser Leu Asp Met Ile Ile Ser Asp Pro Ala Ala Glu
1               5                   10                  15
Ala Ser Arg Ala Gly Lys Lys Gln Leu Arg Gly Val Gln Asn Pro Cys
            20                  25                  30
Pro Ser Ala Arg Ala Arg Pro Arg His Lys Ser Leu Asn Ile Lys Asp
        35                  40                  45
Lys Ile Ser Glu Trp Glu Gly Lys Lys Glu Val Pro Thr Pro Ala Pro
    50                  55                  60
Ser Arg Arg Ala Asp Gly Gln Glu Asp Tyr Leu Pro Ser Ser Thr Val
65                  70                  75                  80
Glu Arg Arg Ser Ser Asp Gly Val Arg Thr Gln Val Thr Glu Ala Lys
                85                  90                  95
Asn Gly Met Arg Pro Gly Thr Glu Ser Thr Glu Lys Glu Arg Asn Lys
            100                 105                 110
Gly Ala Val Asn Val Gly Gly Gln Asp Pro Glu Pro Gly Gln Asp Leu
```

4071

```
        115                    120                    125
Ser Gln Pro Glu Arg Glu Val Asp Pro Ser Trp Gly Arg Gly Arg Glu
    130                    135                    140
Pro Arg Leu Gly Lys Leu Arg Phe Gln Asn Asp His Leu Ser Val Leu
145                    150                    155                    160
Lys Gln Val Lys Lys Leu Glu Gln Ala Leu Lys Asp Gly Ser Ala Gly
                165                    170                    175
Leu Asp Pro Gln Leu Pro Gly Thr Cys Tyr Ser Pro His Cys Pro Pro
                180                    185                    190
Asp Lys Ala Glu Ala Gly Ser Thr Leu Pro Glu Asn Leu Gly Gly Gly
                195                    200                    205
Ser Gly Ser Glu Val Ser Gln Arg Val His Pro Ser Asp Leu Glu Gly
    210                    215                    220
Arg Glu Pro Thr Pro Glu Leu Val Glu Asp Arg Lys Gly Ser Cys Arg
225                    230                    235                    240
Arg Pro Trp Asp Arg Ser Leu Glu Asn Val Tyr Arg Gly Ser Glu Gly
                245                    250                    255
Ser Pro Thr Lys Pro Phe Ile Asn Pro Leu Pro Lys Pro Arg Arg Thr
                260                    265                    270
Phe Lys His Ala Gly Glu Gly Asp Lys Asp Gly Lys Pro Gly Ile Gly
    275                         280                    285
Phe Arg Lys Glu Lys Arg Asn Leu Pro Pro Leu Pro Ser Leu Pro Pro
    290                    295                    300
Pro Pro Leu Pro Ser Ser Pro Pro Ser Ser Val Asn Arg Arg Leu
305                    310                    315                    320
Trp Thr Gly Arg Gln Lys Ser Ser Ala Asp His Arg Lys Ser Tyr Glu
                325                    330                    335
Phe Glu Asp Leu Leu Gln Ser Ser Ser Glu Ser Ser Arg Val Asp Trp
                340                    345                    350
Tyr Ala Gln Thr Lys Leu Gly Leu Thr Arg Thr Leu Ser Glu Glu Asn
    355                    360                    365
Val Tyr Glu Asp Ile Leu Asp Pro Pro Met Lys Glu Asn Pro Tyr Glu
    370                    375                    380
Asp Ile Glu Leu His Gly Arg Cys Leu Gly Lys Lys Xaa Val Ser
385                    390                    395
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<210> 4895
<211> 1087
<212> DNA
<213> Homo sapiens

<400> 4895
gcggaatgtc aactattcaa catggaggcg gaggtcgata agctggaact gatgttccag
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aaagctgagt ctgatctgga ttacattcaa tacaggctgg aatatgaaat caagactaat
120
catcctgatt cagcaagtga gaaaaatcca gttacactct taaggaatt gtcagtgata
180
aagtctcgat atcaaacttt gtatgcccgc tttaaaccag ttgctgttga gcagaaagag
240
agtaagagcc gcatttgtgc tactgtgaaa aagactatga atatgataca aaaactacag
300
aagcaaacag acctggaggt aatgctttca gttgacagct gtcaccactg actaaagaag
360

agaaaactgc ggcagagcaa ttcaaatttc acatgccaga tttatgaaga aatggacttg
420
gaaaggaaat tctaacagag aagagcttaa ttccggagaa atttaggaag atgtcttgtt
480
aacccttgat gtctagagat tgggggctgg tgaagggggt ttggcttcaa tgactggata
540
atgatatctt tcatgagaga gattataaga agaagggcag ataatatatg aataaagttc
600
agccaaaagg atcaaatgag aataaaacga tttaaatata tgtacacacg catgcacaca
660
cacacttagt cttgtaattt caggccagaa attctcaaca ctattttgca tctgttttct
720
ttttctaagt catgataata tagatgttct ggtctatcat aaaagaatgt ttatgtacat
780
ttcagtcatt cggtatgtgg ctttgtaaat taaagtatag gcaaaacatt tgtgttatac
840
atgatatata atttcatttt gtaaatgttg attgcacatg tggtcacatt attgttgaga
900
ctgcttttat gtgacctgta gtctcccaca gaacctaaag taataagctg gcttttctgt
960
gatagccacg tttgcgtatt tctttcccta tttcccttgc ctgctaatgt tgaacagcat
1020
gaacttgctt tctgatgctg ttttagactg tccctgttgt atctcaataa tatctttgtt
1080
ttccttc
1087

<210> 4896
<211> 109
<212> PRT
<213> Homo sapiens

<400> 4896
Met Glu Ala Glu Val Asp Lys Leu Glu Leu Met Phe Gln Lys Ala Glu
 1   5   10   15
Ser Asp Leu Asp Tyr Ile Gln Tyr Arg Leu Glu Tyr Glu Ile Lys Thr
            20   25   30
Asn His Pro Asp Ser Ala Ser Glu Lys Asn Pro Val Thr Leu Leu Lys
        35   40   45
Glu Leu Ser Val Ile Lys Ser Arg Tyr Gln Thr Leu Tyr Ala Arg Phe
        50   55   60
Lys Pro Val Ala Val Glu Gln Lys Glu Ser Lys Ser Arg Ile Cys Ala
65   70   75   80
Thr Val Lys Lys Thr Met Asn Met Ile Gln Lys Leu Gln Lys Gln Thr
                85   90   95
Asp Leu Glu Val Met Leu Ser Val Asp Ser Cys His His
            100   105

<210> 4897
<211> 1733
<212> DNA
<213> Homo sapiens

<400> 4897

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nactttgttg cccgggctgg agtgcagtgg cgcgatctca gctcactgca gcctctgcct
60
ctcaggttca agcaattctc ctgcttcagc ctcccaagta gctgggatta caggcgccca
120
ccacgatgcc cagctaattt ttgtattttc agtaaagaca gggtttcacc atgttggcta
180
ggctggtctc aaactcctga tnccacccgc ctcggcctcc caaagtgctg ggattacagg
240
cgtgaaccac cgcgcccggg tgacctttgg aacttctgac cgactggctt caagttgagg
300
ttcccacaat tccctctgta ggttcaattt gctggagtgg ctcacaaaac taagggaaat
360
acatttactg gtttattata aaggatatta taaaagatac agataaagag atgcataggg
420
tgaggtatga aggaagggca tggagcttcc tgtgccctcc ctgggcgcac caccttcta
480
gaacctctgt atgttcagtt atctggaagc tctctgaatc cagtcccctt ggttttttatg
540
gaagcttcat gacagcagca ttccttctag caggatatgg ggtgggaccg tctctggaat
600
gagtttttatg acccaccatc agaaaggtag ggaagattag agtcctgtct tgggcaggta
660
aaaggaaggg caggaggtta gagtgattgt ctcctgaggc ctgacacacc caatgttgta
720
acaaaagagt gtaacaaggg ctgtgggagt tatgagccag gaactgtgga cgaaaatgaa
780
tgcgtgtgtt tgtatatatg tgtgtctgtg tatttatata tatatgtgtg tatatacaaa
840
tacacacaca cacacgccac cacaaagcca aaaagaaga agtgatcatt tttctaagtg
900
ctacgatgga tgccctggga gagcgagcca gaggggggcat gtttatgggc tgagctgcac
960
cccccaccc ccaatttatg tgttgaaccc ctaatccccg gtagctcgca atggcccgta
1020
tgtgaatgga tatggagata agagaggtga ttacattaag atgaggccgt caggggggccc
1080
ctcatccaat ctcaccagtg tccttataag agaaaatctg gacacacaaa gagacaccag
1140
ggacacctgc actcagaaga ccaaccaggg ccatctccaa gccaaggaga gaggccttag
1200
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1260
ataaatgtct tttgtttaag ccactcagtc tctggtattt tcttatgaga gccagagcag
1320
accaacacag agggtcaggg gaagcgtcta tggggaggtg actcatgtac tgagtcttga
1380
gggagaggtt ccaggcaga tggagcagca tgctccaagg ccttgtgaag gaaaagagct
1440
cagtgtgctc cgggaaccag gagaagatga gggaggccag ggcctaagga gggcagggta
1500
ggagaggaag tgggaagaca tgcaggggac atgtgcacag ggctgggaag gagcctgagt
1560
tttcttctca gtgccatgtg aagccactga agagttttaa tgagaaaagg gacataagtc
1620
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agctcctatt ttaggaggtg gcctctggct gtgtctaatg gagttgacaa gaataaaagt
1680
agaaggagaa gaccaaggag gaggacgcca ggtgagagca ggtggtggtc agg
1733

<210> 4898
<211> 92
<212> PRT
<213> Homo sapiens

<400> 4898
Xaa Phe Val Ala Arg Ala Gly Val Gln Trp Arg Asp Leu Ser Ser Leu
1   5   10   15
Gln Pro Leu Pro Leu Arg Phe Lys Gln Phe Ser Cys Phe Ser Leu Pro
            20   25   30
Ser Ser Trp Asp Tyr Arg Arg Pro Pro Arg Cys Pro Ala Asn Phe Cys
        35   40   45
Ile Phe Ser Lys Asp Arg Val Ser Pro Cys Trp Leu Gly Trp Ser Gln
    50   55   60
Thr Pro Asp Xaa Thr Arg Leu Gly Leu Pro Lys Cys Trp Asp Tyr Arg
65   70   75   80
Arg Glu Pro Pro Arg Pro Gly Asp Leu Trp Asn Phe
                85   90

<210> 4899
<211> 444
<212> DNA
<213> Homo sapiens

<400> 4899
ccggcccatc aaagactggc taaagcatca gccataaatg gggacaaacg tggggccagc
60
agcttctgtt cggggtctcg gcatcagcaa accgcagcag ctttggagaa gggtccgtga
120
gtggcggctc tggaggcagc aacggggtcc tttggggtgg gtgggagttc tgctggattc
180
aggtggaggt gaacatctgc cgttcccaca gccctgcgtg cacccccaaa tgctgctggc
240
ccacagaatc agccagtgcc acggccccac cacagccagg cttggccctg tcagcggcca
300
gcatcccgag ggccagggtc cgagtgtcct caccaaggag gctcttggcg tcgctgtgcc
360
ggctcccatg ggccttctgc tgggtcgagg gtaggtctcc tcctcccct ttgccctggc
420
attaaactga tggtcaggct ggga
444

<210> 4900
<211> 118
<212> PRT
<213> Homo sapiens

<400> 4900
Met Gly Thr Asn Val Gly Pro Ala Ala Ser Val Arg Gly Leu Gly Ile

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 1              5                10                15
Ser Lys Pro Gln Gln Leu Trp Arg Arg Val Arg Glu Trp Arg Leu Trp
            20                25                30
Arg Gln Gln Arg Gly Pro Leu Gly Trp Val Gly Val Leu Leu Asp Ser
        35                40                45
Gly Gly Gly Glu His Leu Pro Phe Pro Gln Pro Cys Val His Pro Gln
    50                55                60
Met Leu Leu Ala His Arg Ile Ser Gln Cys His Gly Pro Thr Thr Ala
65                70                75                80
Arg Leu Gly Pro Val Ser Gly Gln His Pro Glu Gly Gln Gly Pro Ser
            85                90                95
Val Leu Thr Lys Glu Ala Leu Gly Val Ala Val Pro Ala Pro Met Gly
            100               105               110
Leu Leu Leu Gly Arg Gly
        115
```

<210> 4901
<211> 1520
<212> DNA
<213> Homo sapiens

<400> 4901
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ncgggagtcg cggcgctgcg ggtaggagcc gggttgcggg agaccccagg ttcggttggg
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attcccagcc agaacggagc ttaagccggg caggcgatgc gaatgacgga gtagcgagct
120
gcacggcggc gtgctgcgct gttgaggacg ctgtcccgcg cgctcccagg ccgccccgag
180
gcttggggtc ttcgaaggat aatcggcgcc cggggccgaa cagcgggggc acacggggcg
240
ctgccgaagt gcaaggccac ggccagagct cgagcccgac gcgctgtctg gagtcgtagg
300
ttggcgccgt ttggggtcgg ggtctgaggc ttgggcgctg cctgggccga gcggagatcg
360
gggtttgcct cccgtccccg ctcaggaccc tgacgtggct gaagcggccc cgggagcatg
420
agcgggcagc gcgtggacgt caaggtggtg atgctgggca aggagtacgt gggcaagact
480
agcctggtgg agcgctacgt gcacgaccgc tttctggtgg ggccttatca gaacaccatc
540
ggggccgcct tcgtggccaa ggtgatgtcg gtcggagacc ggactgtgac attaggtatt
600
tgggacacag caggctctga gcgctatgag gccatgagta gaatctacta tcggggtgcc
660
aaggctgcca tcgtctgcta tgacctcaca gacagcagca gctttgagcg agcaaagttc
720
tgggtgaagg aactgcgcag cctagaggag ggctgccaaa tctacttatg tggcaccaag
780
agtgacctgc tggaagaaga ccggaggcgt cgacgtgtgg acttccacga cgtccaggac
840
tatgcagaca gtagctgctc ctcagccctt tggggggtgg gggtgtgtgg ctgtctgggt
900
ggatcaaaga aaatagggac tgccttggct gccagggcaa ggtgctctag gaggtcttcc
960
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tggcctcctt gaactgtggg gtccaggaga ctccctgaac tgctagccct ccctttgtc
1020
tgtttatcta attctcaggt atgaggcttt agtcacttct ctttacagat atcaaagctc
1080
agctctttga aacatccagc aagacaggcc agagtgtggg tgagtgctgt gctggagcct
1140
cacagcagga acatgcaggg gcaccagagg aagctgaata gggcacagag ggctgggtca
1200
ctgggagatc ccagggctac tggcattggg ccctcgctga tcatcatttt tcctgccaga
1260
cgagctcttc cagaaagtgg cagaggatta cgtcagtgtg gctgccttcc aggtgatgac
1320
agaggacaag ggcgtggatc tgggccagaa gccaaacccc tacttctaca gctgttgtca
1380
tcactgagtc agcactcacc tggcctgggg gaattaaagg aattccccgt aagcgtggac
1440
ccagctcctt tctgggcttg ggtagtcaaa tgtctgagct acgccaggtc ctcatgtcag
1500
cagagtggcg cctgcctgtc
1520

<210> 4902
<211> 184
<212> PRT
<213> Homo sapiens

<400> 4902
Met Ser Gly Gln Arg Val Asp Val Lys Val Val Met Leu Gly Lys Glu
 1   5   10   15
Tyr Val Gly Lys Thr Ser Leu Val Glu Arg Tyr Val His Asp Arg Phe
            20   25   30
Leu Val Gly Pro Tyr Gln Asn Thr Ile Gly Ala Ala Phe Val Ala Lys
        35   40   45
Val Met Ser Val Gly Asp Arg Thr Val Thr Leu Gly Ile Trp Asp Thr
    50   55   60
Ala Gly Ser Glu Arg Tyr Glu Ala Met Ser Arg Ile Tyr Tyr Arg Gly
65   70   75   80
Ala Lys Ala Ala Ile Val Cys Tyr Asp Leu Thr Asp Ser Ser Ser Phe
                85   90   95
Glu Arg Ala Lys Phe Trp Val Lys Glu Leu Arg Ser Leu Glu Glu Gly
            100   105   110
Cys Gln Ile Tyr Leu Cys Gly Thr Lys Ser Asp Leu Leu Glu Glu Asp
        115   120   125
Arg Arg Arg Arg Arg Val Asp Phe His Asp Val Gln Asp Tyr Ala Asp
    130   135   140
Ser Ser Cys Ser Ser Ala Leu Trp Gly Val Gly Val Cys Gly Cys Leu
145   150   155   160
Gly Gly Ser Lys Lys Ile Gly Thr Ala Leu Ala Ala Arg Ala Arg Cys
                165   170   175
Ser Arg Arg Ser Ser Trp Pro Pro
                180

<210> 4903
<211> 1064

<212> DNA
<213> Homo sapiens

<400> 4903
agccagtgtc ccaggcgttc tcacgccgca acaattcctg agtagggcct tgcttgagtt
60
cttcggaaag tctcatccac ccccacatcg cctctttagg aagtcactta atgttgggct
120
tcattattcc cacatccctt tccttactac ttgcctgcac ttcttgagaa aaagactgca
180
gaaaggagag gtggggcttt cagtagaaac aagcaaaccg cagtccctgt gggggggactc
240
tccaggaaga aggttccgca agaaccgtgg gcgacagtta tggagaagcg tctgcaggag
300
gctcagctgt acaaggagga agggaaccag cgctaccggg aagggaagta ccgagatgct
360
gtgagtaggt accatcgagc tctgcttcag ctgcggggtc tggatccgna gtctgccctc
420
tccgttacct aatctcggac ctcagggccc nggccctcac gcctgnaaca agaaaacata
480
ttgcatacca cccagacaga ctgctataac aatctagctg cttgtctcct tcagatggag
540
cccgtgaact acgaacgagt gagagaatat agtcagaaag tcctggaacg acagcctgat
600
aatgccaagg ccttgtatcg ggccggagtg gccttttttcc atctgcagga ctatgaccag
660
gcccgccact acctcctggc tgccgtgaat aggcagccta agatgccaa cgtccggcgg
720
tacctccagc tgacacagtc agaactcagc agctaccata gaaaagagaa gcagctctac
780
ctgggcatgt ttggttaaca agaagaaag atgctcctcc agttgaactt aggtggacca
840
ttaaacatgc atgaaggaga aatctgagcc tcagcaagag aaattaaccc tatacctctg
900
acccaggtgg atttttgttt ctagttctgc acaaacttca ctacttagac agtctgagtc
960
ttttctgtc tatccatctg tttatttcta tacctttcaa tacatgttat tgttgcagat
1020
atttggcttg agaaatataa tcagaaaaca taaaaaaaaa aaaa
1064

<210> 4904
<211> 106
<212> PRT
<213> Homo sapiens

<400> 4904
Cys Trp Ala Ser Leu Phe Pro His Pro Phe Pro Tyr Tyr Leu Pro Ala
1   5   10   15
Leu Leu Glu Lys Lys Thr Ala Glu Arg Arg Gly Gly Ala Phe Ser Arg
            20   25   30
Asn Lys Gln Thr Ala Val Pro Val Gly Gly Leu Ser Arg Lys Lys Val
        35   40   45
Pro Gln Glu Pro Trp Ala Thr Val Met Glu Lys Arg Leu Gln Glu Ala

```
       50                    55                     60
Gln Leu Tyr Lys Glu Glu Gly Asn Gln Arg Tyr Arg Glu Gly Lys Tyr
65                      70                     75                     80
Arg Asp Ala Val Ser Arg Tyr His Arg Ala Leu Leu Gln Leu Arg Gly
                    85                     90                     95
Leu Asp Pro Xaa Ser Ala Leu Ser Val Thr
                100                     105
```

```
<210> 4905
<211> 615
<212> DNA
<213> Homo sapiens

<400> 4905
cccggcagcc acgtggcgga tggtgttccg cgacaggctc agatgcagca ggcctgtcat
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gttggccagg tcgcggcggc gcacggaggc gatgaagttg tctgccagcc gcagctcggc
120
tgcccggcgg tccagcgagg gtggcacgaa caggaggcct gccctgggc acagcacgct
180
tagggggcagc gactgtgtct ggcagcggca gcggcgggga catgggctgg gtgtgccgag
240
acactggagg acctcgacct ctcctacaac aacctcgagc agctgccctg ggaggccctg
300
ggccgcctgg gcaacgtcaa cacgttgggc ctcgaccaca acctgctggc ttctgtgccc
360
gccggcgctt tttcccgcct gcacaagctg gcccggctgg acatgacctc caaccgcctg
420
accacaatcc cacccgaccc actcttctcc cgcctgcccc tgctcgccag gcccggggc
480
tcgcccgcct ctgccctggt gctggccttt ggcgggaacc ccctgcactg caactgcgag
540
ctggtgtggc tgcgtcgcct ggcgcgggag gacgacctcg aggcctgcgc gtccccacct
600
gctctgggcg gccgc
615
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<210> 4906
<211> 144
<212> PRT
<213> Homo sapiens

<400> 4906
Gly Gln Arg Leu Cys Leu Ala Ala Ala Ala Gly Thr Trp Ala Gly
1                   5                   10                  15
Cys Ala Glu Thr Leu Glu Asp Leu Asp Leu Ser Tyr Asn Asn Leu Glu
                20                  25                  30
Gln Leu Pro Trp Glu Ala Leu Gly Arg Leu Gly Asn Val Asn Thr Leu
            35                  40                  45
Gly Leu Asp His Asn Leu Leu Ala Ser Val Pro Ala Gly Ala Phe Ser
        50                  55                  60
Arg Leu His Lys Leu Ala Arg Leu Asp Met Thr Ser Asn Arg Leu Thr
65                  70                  75                  80
Thr Ile Pro Pro Asp Pro Leu Phe Ser Arg Leu Pro Leu Leu Ala Arg
```

```
                     85                90                95
Pro Arg Gly Ser Pro Ala Ser Ala Leu Val Leu Ala Phe Gly Gly Asn
               100               105               110
Pro Leu His Cys Asn Cys Glu Leu Val Trp Leu Arg Arg Leu Ala Arg
           115               120               125
Glu Asp Asp Leu Glu Ala Cys Ala Ser Pro Pro Ala Leu Gly Gly Arg
       130               135               140
```

<210> 4907
<211> 1748
<212> DNA
<213> Homo sapiens

<400> 4907

nnttttttgct ggaaaatact ttttaattat gaacatgtta aaaataaaaa acagcagaag
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ccctgatatt acctcttttt cctcattttt tatactacct tttaaaataa agcaggaaat
120
gtggccagca gctggtcccg tctcttctgc cccaacagct gtatccacag gttgtgaggc
180
gggaacgact gttctgtaac ccctacaacg gagcctggca ggaaggaaat cacctaaaaa
240
agaaactgtc agagagattt aatagtcaca tgttatcatt aggagttggt tactgtgtca
300
cattcatgct tttagctaaa cactttaaga ttcaatatta cttttttttct ctcctctgaa
360
atgtgtccgg tgaagatgtc ccactaaggt aagtttgaca tggtgtaagg gagttgaaag
420
gggtaaacgc ggataaagag cagattactt gaccctacat tttaagagaa gacgacgcct
480
tccgggcgca cgccgagcag aactccaccg acaccttatc cttgtccaca tggagacaga
540
ctcctcccgc cgagtcgtcc tcttccagca ggtcctgctt ctgctttccc accggcagag
600
cgtagtcgtg gtcaccggcg ggcgagtctc tgaagagcga ggtggtcagc cgcagtccca
660
cgccgctcag ccggctcagc aagcgagcca gtccagtctc gttggctaag actgcccgta
720
ggtagcgact ctcctcctgc agtgcctgta cgcgtttgcc cagctcccga ttctcggccc
780
gcagctcctg gttctcggct gccagacccc ggactcgact ctccagcccc atcacgtact
840
ccttcttctt cagtcgatta aggcgggcag cggccgccgc cgccttccgg ggactctttg
900
tcgccgcctn ggttgttgtc gttaccgctg ccgccaccgc cgcctcctcc tggggacttt
960
ctccgcctct tttcggcgct gccactgtca ctgctgctgc ctgctgctgc agcctccgat
1020
accgtttaac agcctttgca gnncaggtca gagaagcgct gcatttcagc agccgcggcc
1080
tcatcgtcat cgtcccctct ccacaggccg ccgctatccg agcctccgcc agacgaggag
1140
agaggccccn nggcgagcta agcccggggt ccaggtgcca gtccggttgc ctggggtcca
1200
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ggagatccgc cagttccagc ccagacagaa agtccatatc ctccgtctct tcccccggga
1260
ggctggcgat cgcctcctcc tccatctcct cgggggaggg cgcgcgcacg gccacgccgc
1320
cgcggctccc cctccncggc ttccaactct ccttcgtcgc caaactgctg cttgcggccg
1380
ggagatccgg ccgccgccgt ctcctcctcc cccgctgcag cccgggtcag gtcagagggc
1440
agcgaacaag ttgcagccgg ctccgggctc tcactgcggg ttggggagtt gctgcccgag
1500
gctgccagca gcttggtcag gctatgcctc atgagggcca cgggcggccg cggtagcccc
1560
ggccgctaag agtggctcac gggccccaag gatcccaggc cccagggcgg gtagcccccg
1620
gcactggccg aaacgaaatg cagggaaagg tccgagtcgc ctcccgcctc acttggctag
1680
tcgcacccaa ggcgcgggga gggacgggag aacgaagcgg tgaggccctg cgatgactcg
1740
accgcgcc
1748


<210> 4908
<211> 55
<212> PRT
<213> Homo sapiens


<400> 4908
Glu Lys Thr Thr Pro Ser Gly Arg Thr Pro Ser Arg Thr Pro Pro Thr
 1               5                  10                  15
Pro Tyr Pro Cys Pro His Gly Asp Arg Leu Leu Pro Pro Ser Arg Pro
            20                  25                  30
Leu Pro Ala Gly Pro Ala Ser Ala Phe Pro Pro Ala Glu Arg Ser Arg
        35                  40                  45
Gly His Arg Arg Ala Ser Leu
    50                  55


<210> 4909
<211> 1960
<212> DNA
<213> Homo sapiens


<400> 4909
nacgcgtcct gcggtcagga cagtgttcta agtgtgaagg gtccctgggc agaggctggg
60
agggtggcca gagaccaggg agggcccctc catctggtgg gtttggcagg tgtgtccccg
120
cgcggctccc cgaaccggaa gtggaggtga gctgtcgcgg cggcgcccg gccttgctca
180
acgcccagca gtccccaccg tcgctgccgc cgccaccgcc ctcggccgct gccgaggcct
240
cctgcagcca tcatgtccgc cagcgccgtc tacgtgctgg acctgaaggg caaggtgctc
300
atctgccgga actaccgtgg cgacgtggac atgtcagagg tggagcactt catgcccatc
360
```

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ctgatggaga aggaggagga ggggatgctg tcgcccatcc tggcccacgg gggggtccgt
420
ttcatgtgga tcaaacacaa caacctgtat ctggttgcca catccaagaa gaacgcgtgc
480
gtgtcgctgg tcttttcttt cctctataag gtggtgcagg tgttttccga gtacttcaag
540
gagctggagg aggagagcat ccgggacaac tttgttatca tctacgagct gctggacgag
600
ctcatggact tcggcttccc ccagaccacc gacagcaaga tcctgcagga gtacatcact
660
cagcagagca acaagctgga gacgggcaag tcacgggtgc cacccactgt caccaacgct
720
gtgtcctggc gctccgaggg tatcaagtat aagaagaacg aggtcttcat tgatgtcata
780
gagtctgtca acctgctggt caatgccaac ggcagcgtcc ttctgagcga aatcgtcggt
840
accatcaaga tgcgagtctt cctctcgggc atgcccgagc tgcgcctggg cctcaacgac
900
aaggtcctct ttgacaacac gggccgcggc aaaagcaaat ccgtggagct ggaggatgtg
960
aagttccacc agtgtgtgcg gctatcacgc ttcgagaatg accgcaccat ctccttcatc
1020
ccacccgacg gcgagttcga gctcatgtcc taccgtctca cacccacgt caagcctttg
1080
atatggatcg agtctgtcat tgagaagttc tcccacagcc gcatcgagta catggtcaag
1140
gccaaggggc agtttaagaa acagtcagtg gccaacggtg tggagatatc tgtgcctgta
1200
cccagcgatg ccgactcccc cagattcaag accagtgtgg gcagcgccaa gtatgtgccg
1260
gagagaaacg tcgtgatttg gagtattaag tctttcccgg ggggcaagga gtacttgatg
1320
cgagcccact ttggcctccc cagtgtggaa aaggaagagg tggagggccg gccccccatc
1380
ggggtcaagt ttgagatccc ctacttcacc gtctctggga tccaggtccg atacatgaag
1440
atcattgaga aaagtggtta ccaggccctg ccctgggttc gctacatcac ccagagtggc
1500
gattaccaac ttcgtaccag ctagaaggga gaagagatgg gggcttgaac acggggcttc
1560
cttacagccc cggatgcaga ttttagaggg agggcaggtg cgggctgtgt gtgtctgtgt
1620
gagggcaggt cctggacttg gcagtttctt gctcccagca cccgcccctt cctcacctct
1680
tccttattcc ataggctggg agagaaactc tctctgcttc cctcgccctt ggagctttcc
1740
ccatcccccc gattttatat gaagaaatag aagaggggct tgaagtcccc ctcgcgagtg
1800
ccttcttgca attacctgcc ttagcgggtg ttgcgggtcc ctccttcaca gccgctgagc
1860
ccagaggtcc cgctggcccc tcctctgaat tttaggatgt cattaaaaag atgaatctaa
1920
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa
1960
```

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<210> 4910
<211> 423
<212> PRT
<213> Homo sapiens

<400> 4910
Met Ser Ala Ser Ala Val Tyr Val Leu Asp Leu Lys Gly Lys Val Leu
1               5                   10                  15
Ile Cys Arg Asn Tyr Arg Gly Asp Val Asp Met Ser Glu Val Glu His
            20                  25                  30
Phe Met Pro Ile Leu Met Glu Lys Glu Glu Glu Gly Met Leu Ser Pro
        35                  40                  45
Ile Leu Ala His Gly Gly Val Arg Phe Met Trp Ile Lys His Asn Asn
    50                  55                  60
Leu Tyr Leu Val Ala Thr Ser Lys Lys Asn Ala Cys Val Ser Leu Val
65                  70                  75                  80
Phe Ser Phe Leu Tyr Lys Val Val Gln Val Phe Ser Glu Tyr Phe Lys
                85                  90                  95
Glu Leu Glu Glu Glu Ser Ile Arg Asp Asn Phe Val Ile Ile Tyr Glu
            100                 105                 110
Leu Leu Asp Glu Leu Met Asp Phe Gly Phe Pro Gln Thr Thr Asp Ser
            115                 120                 125
Lys Ile Leu Gln Glu Tyr Ile Thr Gln Gln Ser Asn Lys Leu Glu Thr
    130                 135                 140
Gly Lys Ser Arg Val Pro Pro Thr Val Thr Asn Ala Val Ser Trp Arg
145                 150                 155                 160
Ser Glu Gly Ile Lys Tyr Lys Lys Asn Glu Val Phe Ile Asp Val Ile
                165                 170                 175
Glu Ser Val Asn Leu Leu Val Asn Ala Asn Gly Ser Val Leu Leu Ser
            180                 185                 190
Glu Ile Val Gly Thr Ile Lys Met Arg Val Phe Leu Ser Gly Met Pro
    195                 200                 205
Glu Leu Arg Leu Gly Leu Asn Asp Lys Val Leu Phe Asp Asn Thr Gly
    210                 215                 220
Arg Gly Lys Ser Lys Ser Val Glu Leu Glu Asp Val Lys Phe His Gln
225                 230                 235                 240
Cys Val Arg Leu Ser Arg Phe Glu Asn Asp Arg Thr Ile Ser Phe Ile
            245                 250                 255
Pro Pro Asp Gly Glu Phe Glu Leu Met Ser Tyr Arg Leu Asn Thr His
        260                 265                 270
Val Lys Pro Leu Ile Trp Ile Glu Ser Val Ile Glu Lys Phe Ser His
    275                 280                 285
Ser Arg Ile Glu Tyr Met Val Lys Ala Lys Gly Gln Phe Lys Lys Gln
    290                 295                 300
Ser Val Ala Asn Gly Val Glu Ile Ser Val Pro Val Pro Ser Asp Ala
305                 310                 315                 320
Asp Ser Pro Arg Phe Lys Thr Ser Val Gly Ser Ala Lys Tyr Val Pro
            325                 330                 335
Glu Arg Asn Val Val Ile Trp Ser Ile Lys Ser Phe Pro Gly Gly Lys
            340                 345                 350
Glu Tyr Leu Met Arg Ala His Phe Gly Leu Pro Ser Val Glu Lys Glu
        355                 360                 365
Glu Val Glu Gly Arg Pro Pro Ile Gly Val Lys Phe Glu Ile Pro Tyr
```

```
         370                 375                 380
Phe Thr Val Ser Gly Ile Gln Val Arg Tyr Met Lys Ile Ile Glu Lys
385                         390                 395                 400
Ser Gly Tyr Gln Ala Leu Pro Trp Val Arg Tyr Ile Thr Gln Ser Gly
                405                     410                 415
Asp Tyr Gln Leu Arg Thr Ser
            420
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<210> 4911
<211> 1862
<212> DNA
<213> Homo sapiens

<400> 4911
tataagaaat aattgtgaca tttcatgcct ggaaatgtat cacggggggct ttcgttcata
60
ttgacactat atattactga atggatcagt taatatataa ccagtttaaa ggacctgaaa
120
atgtagtgac agccaagaag gatattttga agtttgaaat gatccctata taaatagaac
180
ggatcagcat aactttggga taaaattagc cgacagtttg tggactctcc agcatgcgcc
240
tgtttgctcg gtgctgttct ctcgataaat cacaacaaag cttccagagg gagaggaagg
300
atggacggca ccactgcccc tgtcactaaa tctggagctg ccaagttagt taagagaaat
360
ttccttgagg cgctaaagtc caatgacttc ggaaaattga aggctatttt gatccaaagg
420
caaatagatg tggacactgt ttttgaagtc gaagatgaga atatggtttt ggcatcttat
480
aaacaaggtt actggttgcc tagctataaa ttgaagtctt cctgggccac aggcctccat
540
ctctctgtct tgtttggcca tgtggaatgt cttctggtgc tactggacca caatgctaca
600
atcaactgta gacccaatgg gaaaacccct cttcacgtgg cttgtgaaat ggccaatgtg
660
gattgtgtta agatcctctg tgatcgtggg gcaaagctca attgctactc cttaagtgga
720
cacacagctt tgcacttttg tacaactcca agttccattc tctgtgccaa gcaattggtt
780
tggagagtga cacaagtcaa ccacatgtta ggaaattccc tggtcaatga agtggaacat
840
gtgacacaag tcaaccacat gttaggaaat tccctggtca atgaagtgga acatggggcg
900
aatgtgaaca tgaagaccaa caaccaagat gaggagacgc ccttgcacac ggctgcccac
960
ttcggccttt cggagctggt ggccttctac gtggaacacg gggccatagt ggacagcgtg
1020
aatgcccaca tggagacccc cctggccatc gccgcctact gggccctccg ctttaaggag
1080
caggagtaca gcacggagca ccacctggtc tgccgcatgc tgcttgacta caaagccgaa
1140
gtcaatgccc gagatgacga ctttaaatct cccctccaca aggcagcctg gaactgtgac
1200
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cacgtgctca tgcacatgat gctggaagct ggcgccgaag ccaatctcat ggatatcaac
1260
ggctgtgctg ccatccagta cgtgctgaag gtcacctccg tgcgccctgc tgcccagcct
1320
gagatctgct accagctcct gttgaaccat ggggctgccc gaatataccc tccacagttc
1380
cataaggtga tacaggcctg ccattcttgt cctaaagcaa ttgaagttgt agtcaatgcc
1440
tatgaacaca tcagatggaa cacaaagtgg agaagagcta tccccgatga tgacttggag
1500
gtaaataatc gattcccttc taatagtttt cactatcaag tacttccaga ctgctctaga
1560
agtacagaaa attgtaacaa aaaagttggt tttgagaatg cctttaaagc gtactcaaat
1620
gcaatgagac aaagggttat aaaatgcagg tttgagagtt aatatttcca tcaaatatgt
1680
ggcattaagg agtgtcttgg ggaattcctc catttaaggg caagttgaat taagtatata
1740
aaggtggcag tttctccttc ttctcattaa tttagatgag ttaaatgata acatttggaa
1800
ttgcttatat agcattttta ccagaatatt aaagcgtttt gtgtagatta tttcatttac
1860
tt
1862


<210> 4912
<211> 453
<212> PRT
<213> Homo sapiens

<400> 4912
Met Asp Gly Thr Thr Ala Pro Val Thr Lys Ser Gly Ala Ala Lys Leu
1               5                   10                  15
Val Lys Arg Asn Phe Leu Glu Ala Leu Lys Ser Asn Asp Phe Gly Lys
            20                  25                  30
Leu Lys Ala Ile Leu Ile Gln Arg Gln Ile Asp Val Asp Thr Val Phe
        35                  40                  45
Glu Val Glu Asp Glu Asn Met Val Leu Ala Ser Tyr Lys Gln Gly Tyr
    50                  55                  60
Trp Leu Pro Ser Tyr Lys Leu Lys Ser Ser Trp Ala Thr Gly Leu His
65                  70                  75                  80
Leu Ser Val Leu Phe Gly His Val Glu Cys Leu Leu Val Leu Leu Asp
                85                  90                  95
His Asn Ala Thr Ile Asn Cys Arg Pro Asn Gly Lys Thr Pro Leu His
            100                 105                 110
Val Ala Cys Glu Met Ala Asn Val Asp Cys Val Lys Ile Leu Cys Asp
            115                 120                 125
Arg Gly Ala Lys Leu Asn Cys Tyr Ser Leu Ser Gly His Thr Ala Leu
        130                 135                 140
His Phe Cys Thr Thr Pro Ser Ser Ile Leu Cys Ala Lys Gln Leu Val
145                 150                 155                 160
Trp Arg Val Thr Gln Val Asn His Met Leu Gly Asn Ser Leu Val Asn
            165                 170                 175
Glu Val Glu His Val Thr Gln Val Asn His Met Leu Gly Asn Ser Leu

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             180                    185                    190
Val Asn Glu Val Glu His Gly Ala Asn Val Asn Met Lys Thr Asn Asn
             195                    200                    205
Gln Asp Glu Glu Thr Pro Leu His Thr Ala Ala His Phe Gly Leu Ser
         210                    215                    220
Glu Leu Val Ala Phe Tyr Val Glu His Gly Ala Ile Val Asp Ser Val
225                    230                    235                    240
Asn Ala His Met Glu Thr Pro Leu Ala Ile Ala Ala Tyr Trp Ala Leu
                 245                    250                    255
Arg Phe Lys Glu Gln Glu Tyr Ser Thr Glu His His Leu Val Cys Arg
             260                    265                    270
Met Leu Leu Asp Tyr Lys Ala Glu Val Asn Ala Arg Asp Asp Asp Phe
         275                    280                    285
Lys Ser Pro Leu His Lys Ala Ala Trp Asn Cys Asp His Val Leu Met
         290                    295                    300
His Met Met Leu Glu Ala Gly Ala Glu Ala Asn Leu Met Asp Ile Asn
305                    310                    315                    320
Gly Cys Ala Ala Ile Gln Tyr Val Leu Lys Val Thr Ser Val Arg Pro
                 325                    330                    335
Ala Ala Gln Pro Glu Ile Cys Tyr Gln Leu Leu Leu Asn His Gly Ala
             340                    345                    350
Ala Arg Ile Tyr Pro Pro Gln Phe His Lys Val Ile Gln Ala Cys His
             355                    360                    365
Ser Cys Pro Lys Ala Ile Glu Val Val Val Asn Ala Tyr Glu His Ile
         370                    375                    380
Arg Trp Asn Thr Lys Trp Arg Arg Ala Ile Pro Asp Asp Asp Leu Glu
385                    390                    395                    400
Val Asn Asn Arg Phe Pro Ser Asn Ser Phe His Tyr Gln Val Leu Pro
                 405                    410                    415
Asp Cys Ser Arg Ser Thr Glu Asn Cys Asn Lys Lys Val Gly Phe Glu
             420                    425                    430
Asn Ala Phe Lys Ala Tyr Ser Asn Ala Met Arg Gln Arg Val Ile Lys
         435                    440                    445
Cys Arg Phe Glu Ser
         450
```

```
<210> 4913
<211> 2090
<212> DNA
<213> Homo sapiens

<400> 4913
gtgccaatat gcaaaagagg tggcccagat gcaggcccgc cccctggagc ggccgaggta
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gggggtgagg cctccgcggg cgccgctggc atcccagcgt tctctgcggg cgcaggggg
120
ccgctcttgc ccggcgtggc gactcgctag cgtcagcagc gccgcagccg gacgagaaag
180
cggaagatgg cggcggcggc cgggaggccg tgaggagagc ggcggctgcg agggcggccg
240
atggcggccg ggaggcgccc tcggacactt gcgggtcgtt agggcgcgac gctgggaggc
300
atgtcggagc acgtggagcc cgcagctccg gggcccgggc caacggcggg cggcggcggc
360
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ccggcccccg cgcgcgggcc tcgcaccccc aatctcaacc ccaacccct catcaacgtg
420

cgcgaccggc tcttccacgc gctgttcttc aagatggctg tcacctattc gcggctcttc
480

ccgcccgcct ccgccgtct cttcgagttc ttcgtgctgc tcaaggccct gtttgtgctc
540

ttcgtcctgg cctacatcca catcgtcttc tcccgctcgc ccatcaactg cctggagcat
600

gtgcgtgaca agtggccgcg tgagggcatc ctgcgtgtgg aagtgcggca caactcgagc
660

cgcgcgcccg tcttcctaca gttctgtgac agcggcggcc gcgggagctt cccgggcctg
720

gccgtggaac caggcagcaa cctggacatg gaagatgagg aggaggaaga gctgaccatg
780

gagatgtttg ggaacagctc catcaagttt gagctggaca tcgagcccaa ggtgttcaag
840

ccgccgagta gcacagaggc cctgaatgac agccaggagt tccccttccc cgagacgccc
900

accaaagtgt ggccgcagga cgagtacatc gtggagtact cactagagta tggcttcctt
960

cgcctgtcgc aggccacccg ccagcgcctg agcatccccg tcatggtggt caccctggac
1020

cccacgcggg accagtgctt cggggaccgc ttcagccgcc tgctgctgga tgagttcctg
1080

ggctacgatg acatcctcat gtccagcgtg aagggcctgg ccgagaacga ggagaacaag
1140

ggcttcctgc ggaatgtggt gtcgggcgag cactaccgct ttgtgagcat gtggatggcg
1200

cggacgtcct acctggccgc cttcgccatc atggtcatct tcacgctgag cgtgtccatg
1260

ctgctgcggt actcacacca ccagatcttc gtcttcatcg tggacctgct gcagatgctg
1320

gagatgaaca tggccatcgc cttccccgca gcgcccctgc tgaccgtcat cctggccctc
1380

gtcgggatgg aggccatcat gtcggagttc ttcaacgaca ccaccaccgc cttctacatc
1440

atcctcatcg tgtggctcgc ggaccagtat gacgccatct gctgccacac cagcaccagc
1500

aagcggcatt ggctgcggtt cttctatctc taccacttcg ccttctatgc ctatcactac
1560

cgcttcaatg ggcagtatag cagcctggcc ctggtcacct cctggctctt catccagcat
1620

tccatgatct acttcttcca ccactatgag ctgcctgcca tcctgcagca ggtccgcatc
1680

caggagatgc tgcttcaggc gccgccactg ggccccggga ccccacggc gctgcccgat
1740

gacatgaaca caactcgggg cgccccggct acagcccctg actctgccgg ccagcccccc
1800

gccctgggcc ccgtgtttga gctggtcagc aaggagaggg ggtggggttc gcggaaggt
1860

tctggagggg tcttggtagg tctgcagtga accgtcctga ggatggagtg gggtcccatg
1920

gtgcaggtct ctgagcaagg cggaggtgtg gaggagaggc cggcttgggg tggggcctcg
1980

cgccctagtg ccggccggcc tcagcccggc tctgcctggt gctccctgca gtgccttctc
2040
catggccccg ccctccccgc gtgtgcgcca ggcttggggt ccccgggaga
2090

<210> 4914
<211> 529
<212> PRT
<213> Homo sapiens

<400> 4914
Met Ser Glu His Val Glu Pro Ala Ala Pro Gly Pro Gly Pro Asn Gly
1   5   10   15
Gly Gly Gly Gly Pro Ala Pro Ala Arg Gly Pro Arg Thr Pro Asn Leu
            20   25   30
Asn Pro Asn Pro Leu Ile Asn Val Arg Asp Arg Leu Phe His Ala Leu
        35   40   45
Phe Phe Lys Met Ala Val Thr Tyr Ser Arg Leu Phe Pro Pro Ala Phe
    50   55   60
Arg Arg Leu Phe Glu Phe Phe Val Leu Leu Lys Ala Leu Phe Val Leu
65   70   75   80
Phe Val Leu Ala Tyr Ile His Ile Val Phe Ser Arg Ser Pro Ile Asn
                85   90   95
Cys Leu Glu His Val Arg Asp Lys Trp Pro Arg Glu Gly Ile Leu Arg
            100   105   110
Val Glu Val Arg His Asn Ser Ser Arg Ala Pro Val Phe Leu Gln Phe
            115   120   125
Cys Asp Ser Gly Gly Arg Gly Ser Phe Pro Gly Leu Ala Val Glu Pro
    130   135   140
Gly Ser Asn Leu Asp Met Glu Asp Glu Glu Glu Glu Leu Thr Met
145   150   155   160
Glu Met Phe Gly Asn Ser Ser Ile Lys Phe Glu Leu Asp Ile Glu Pro
                165   170   175
Lys Val Phe Lys Pro Pro Ser Ser Thr Glu Ala Leu Asn Asp Ser Gln
            180   185   190
Glu Phe Pro Phe Pro Glu Thr Pro Thr Lys Val Trp Pro Gln Asp Glu
            195   200   205
Tyr Ile Val Glu Tyr Ser Leu Glu Tyr Gly Phe Leu Arg Leu Ser Gln
    210   215   220
Ala Thr Arg Gln Arg Leu Ser Ile Pro Val Met Val Val Thr Leu Asp
225   230   235   240
Pro Thr Arg Asp Gln Cys Phe Gly Asp Arg Phe Ser Arg Leu Leu Leu
            245   250   255
Asp Glu Phe Leu Gly Tyr Asp Asp Ile Leu Met Ser Ser Val Lys Gly
            260   265   270
Leu Ala Glu Asn Glu Glu Asn Lys Gly Phe Leu Arg Asn Val Val Ser
        275   280   285
Gly Glu His Tyr Arg Phe Val Ser Met Trp Met Ala Arg Thr Ser Tyr
    290   295   300
Leu Ala Ala Phe Ala Ile Met Val Ile Phe Thr Leu Ser Val Ser Met
305   310   315   320
Leu Leu Arg Tyr Ser His His Gln Ile Phe Val Phe Ile Val Asp Leu
            325   330   335
Leu Gln Met Leu Glu Met Asn Met Ala Ile Ala Phe Pro Ala Ala Pro

```
                  340              345              350
Leu Leu Thr Val Ile Leu Ala Leu Val Gly Met Glu Ala Ile Met Ser
         355              360              365
Glu Phe Phe Asn Asp Thr Thr Thr Ala Phe Tyr Ile Ile Leu Ile Val
     370              375              380
Trp Leu Ala Asp Gln Tyr Asp Ala Ile Cys Cys His Thr Ser Thr Ser
385              390              395              400
Lys Arg His Trp Leu Arg Phe Phe Tyr Leu Tyr His Phe Ala Phe Tyr
             405              410              415
Ala Tyr His Tyr Arg Phe Asn Gly Gln Tyr Ser Ser Leu Ala Leu Val
         420              425              430
Thr Ser Trp Leu Phe Ile Gln His Ser Met Ile Tyr Phe Phe His His
     435              440              445
Tyr Glu Leu Pro Ala Ile Leu Gln Gln Val Arg Ile Gln Glu Met Leu
     450              455              460
Leu Gln Ala Pro Pro Leu Gly Pro Gly Thr Pro Thr Ala Leu Pro Asp
465              470              475              480
Asp Met Asn Asn Asn Ser Gly Ala Pro Ala Thr Ala Pro Asp Ser Ala
             485              490              495
Gly Gln Pro Pro Ala Leu Gly Pro Val Phe Glu Leu Val Ser Lys Glu
         500              505              510
Arg Gly Trp Gly Ser Ala Glu Gly Ser Gly Gly Val Leu Val Gly Leu
     515              520              525
Gln
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```
<210> 4915
<211> 1157
<212> DNA
<213> Homo sapiens

<400> 4915
gcacaggaag ctgctttatt cttgctgaga gacaggggct gctgcccaca cacagaccct
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gtgtccaccc tgcagaaaag gccaggaggg cctgcagagc tgggaagcgc cacccaaggg
120
tctcagtcac caagactgca ggagaggcaa ggccatgtca ggcctggcag ctgtggctgg
180
ggccaggagg gagggaccag gcccatgtgg aacaggaca aatgcccaag gccacatcct
240
tcgtccacag tcctgaggct cctgccaggc tgacaggaaa cagcccagag ctgaggtctt
300
tgagccggtc attccaacat tgcaagcacc acccagtcct cctggctgaa gttgagtgag
360
gtaagaaggg cccgtggcca gggacaggga gggccctcag gaggctccca gggctgctgc
420
tgaggccggg cagcgtccta ggcctcaagg acactccttt ctccccgctg ccccaagcca
480
ccatggcagc agcatcaggg ctgtgccgcc tcatccccat ccctgtctgg gcagatgtga
540
agggtgaccg tctcccccac tgtcccgaag ttgacggtct gggtggaaag ctctgtggtg
600
aagctgctct ggccactgtc cgcagaacgc cggatgcggg tgcagaaaga ctgcgtccag
660
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ggagcactgc ccacaggccg agccgggggcc tcccgcaaga ggaaggaggt gccctcaagg
720
ctacggacct ggggtcccgg tggtgacgcc ccacggggct caggcctaaa gaggccgaga
780
gggcctcggg gacccagtgc agccccacgc tgagcagcac aggctgcccc accgtgggct
840
ccccgatctc tctctggatc accgagacct cgcagggagg gtcatcaggg gcgccaggcc
900
cagggccacc acagtggaag gtctcccctt ccccaggcac gtaatcttcc aggtcagcca
960
gtgtcagcat gcggccgttg tgcgtgagga tcttggggtc acgatcccca aggctgtgtg
1020
tgtcctggga ctcctccgtc acaaagagag tctccgtctt cccccctcttc ctagtcccgc
1080
ctcctccatc gtgccctcct cctccaggct gcccatgcca gaacggagag agaactagtt
1140
ctctctctct ctctctc
1157
```

<210> 4916
<211> 59
<212> PRT
<213> Homo sapiens

<400> 4916
```
Met Arg Val Gln Lys Asp Cys Val Gln Gly Ala Leu Pro Thr Gly Arg
  1               5                  10                  15
Ala Gly Ala Ser Arg Lys Arg Lys Glu Val Pro Ser Arg Leu Arg Thr
             20                  25                  30
Trp Gly Pro Gly Gly Asp Ala Pro Arg Gly Ser Gly Leu Lys Arg Pro
         35                  40                  45
Arg Gly Pro Arg Gly Pro Ser Ala Ala Pro Arg
     50                  55
```

<210> 4917
<211> 1544
<212> DNA
<213> Homo sapiens

<400> 4917
```
cgaagcacct cctctctctg actttccgcc ttcccgctgc gaccccggtt ttgcccctct
60
ccagctccct cagccgcggg cacctgagct ctccgcggcc accaggggggc gccgcggcc
120
cagtctgggc gcgagagccg ccaagcgccc actccgttcc tcctggtgcc ccgccccgtc
180
cggccgcggc cccgcccctc ccggcgcccc gccccgtccg gcagcggcct cgctccctcc
240
gatccccccc gcgcccggga cccctggccc cactgttggg ccagctcgcc gggtccggcc
300
atgggccccg ccgctcgccc cgcgctgaga tcgccgccgc cgcctccgcc gccgcctccg
360
tctccgctgc tgctgctgct gcccctgctg ccgctgtggc tgggcctggc ggggcccggg
420
```

gccgcggcgg acggcagcga gccggcggcc ggggcggggc ggggcggagc ccgcgccgtg
480

cgggtggacg tgagactgcc gcgccaggac gctctggtcc tggagggcgt caggatcggc
540

tccgaagccg accggcgcc cctgctgggc ggtcgtctgc tgctgatgga tgtcgtggat
600

gctgagcagg aggcacccgc agatggctgg attgcagtgg catatgtggg caaggagcag
660

gcggcccagt tccaccagga gaataagggc agtggcccgc aggcctatcc caaggccctg
720

gtccagcaga tgcggcgggc cctcttcctg ggtgcctctg ccctgcttct tctcatcctg
780

aaccacaacg tggtccgaga gctggacata tcccagcttc tgctcaggcc agtgatcgtc
840

ctccattatt cctccaatgt caccaagctg ttggatgcat tgctgcagag gacccaggcc
900

acggctgaga tcaccagcgg agagtccctg tctgccaata tcgagtggaa gttgaccttg
960

tggaccacct gtggcctctc caaggatggc tatggaggat ggcaggactt ggtctgcctt
1020

ggaggcagtc gtgcccagga gcagaaaccc ctgcagcagc tgtggaacgc catcctgctg
1080

gtggccatgc tcctgtgcac aggcctcgtg gtccaggccc agcggcaggc gtcgcggcag
1140

agccagcggg agctcggagg ccaggtggac ctgtttaagc gccgcgtggt gcggagactg
1200

gcatccctca agacacggcg ctgccggctg agcagggcag cgcagggcct cccagatccg
1260

ggtgctgaga cctgtgcggt gtgcctggac tacttctgca caaacaggc tagtgccccg
1320

gtggctccgg gtgctgccct gtaagcacga gtttcaccga gactgtgtgg acccctggct
1380

gatgctccag cagacctgcc cactgtgcaa attcaacgtc ctgggtgagc accaggggtg
1440

gggtccctcg gcctactctg cctgctcctc acctgatgcc tctctccctg ttcttcttcc
1500

cctcccctgc agggaaccgc tactccgatg attagctgcc cagc
1544

<210> 4918
<211> 347
<212> PRT
<213> Homo sapiens

<400> 4918
Met Gly Pro Ala Ala Arg Pro Ala Leu Arg Ser Pro Pro Pro Pro Pro
1   5   10   15
Pro Pro Pro Pro Ser Pro Leu Leu Leu Leu Leu Pro Leu Leu Pro Leu
            20   25   30
Trp Leu Gly Leu Ala Gly Pro Gly Ala Ala Ala Asp Gly Ser Glu Pro
        35   40   45
Ala Ala Gly Ala Gly Arg Gly Gly Ala Arg Ala Val Arg Val Asp Val
        50   55   60
Arg Leu Pro Arg Gln Asp Ala Leu Val Leu Glu Gly Val Arg Ile Gly

```
65                      70                      75                      80
Ser Glu Ala Asp Pro Ala Pro Leu Leu Gly Gly Arg Leu Leu Leu Met
                    85                      90                      95
Asp Val Val Asp Ala Glu Gln Glu Ala Pro Ala Asp Gly Trp Ile Ala
                100                     105                     110
Val Ala Tyr Val Gly Lys Glu Gln Ala Ala Gln Phe His Gln Glu Asn
            115                     120                     125
Lys Gly Ser Gly Pro Gln Ala Tyr Pro Lys Ala Leu Val Gln Gln Met
        130                     135                     140
Arg Arg Ala Leu Phe Leu Gly Ala Ser Ala Leu Leu Leu Leu Ile Leu
145                     150                     155                     160
Asn His Asn Val Val Arg Glu Leu Asp Ile Ser Gln Leu Leu Leu Arg
                165                     170                     175
Pro Val Ile Val Leu His Tyr Ser Ser Asn Val Thr Lys Leu Leu Asp
            180                     185                     190
Ala Leu Leu Gln Arg Thr Gln Ala Thr Ala Glu Ile Thr Ser Gly Glu
        195                     200                     205
Ser Leu Ser Ala Asn Ile Glu Trp Lys Leu Thr Leu Trp Thr Thr Cys
    210                     215                     220
Gly Leu Ser Lys Asp Gly Tyr Gly Gly Trp Gln Asp Leu Val Cys Leu
225                     230                     235                     240
Gly Gly Ser Arg Ala Gln Glu Gln Lys Pro Leu Gln Gln Leu Trp Asn
                245                     250                     255
Ala Ile Leu Leu Val Ala Met Leu Leu Cys Thr Gly Leu Val Val Gln
            260                     265                     270
Ala Gln Arg Gln Ala Ser Arg Gln Ser Gln Arg Glu Leu Gly Gly Gln
        275                     280                     285
Val Asp Leu Phe Lys Arg Arg Val Val Arg Arg Leu Ala Ser Leu Lys
        290                     295                     300
Thr Arg Arg Cys Arg Leu Ser Arg Ala Ala Gln Gly Leu Pro Asp Pro
305                     310                     315                     320
Gly Ala Glu Thr Cys Ala Val Cys Leu Asp Tyr Phe Cys Asn Lys Gln
                325                     330                     335
Ala Ser Ala Pro Val Ala Pro Gly Ala Ala Leu
            340                     345
```

<210> 4919
<211> 1362
<212> DNA
<213> Homo sapiens

<400> 4919
ncggaggcgg gcacttgggg ggaaagttga gacgtgatta ccgggttggg cgggccccat
60
ctgggagggg tttgtgggtg aactcggggt ccaccgcccg ctgaggagat ggatgaggac
120
gggcttcctc tcatggggtc aggcatagac ctgaccaagg tgccagctat tcaacagaaa
180
agaacggtgg cttttctaaa ccaatttgtg gtgcacactg tacagttcct caaccgcttt
240
tctacagttt gtgaggagaa actggcagac ctttcacttc gtatccaaca aattgaaaca
300
actctcaata ttttagatgc aaagttgtca tctatcccag gcctagatga tgtcacagtt
360

```
gaagtatctc ctttaaatgt caccagtgtc acaaatggag cacatcctga agccacttca
420
gagcaaccac agcagaacag tacacaagac tctggactac aggaaagtga agtatcagca
480
gaaaatatct taactgtagc caaggatcca agatatgcca gatatctcaa aatggttcaa
540
gtgggtgtac cagtgatggc aataagaaac aaaatgatat cagaaggact agacccagat
600
cttcttgaga ggccagatgc tccagtgcct gatggcgaaa gtgagaaaac tgtagaagaa
660
agttcagata gcgaatcttc ttttagtgat taagcttaat tttgataaga attacatatg
720
catgcatagg ggtacattta cattctgtaa gagattgagc ctgaactctc ttagtcataa
780
aaacatcaaa tggccacatg tccactacca agcttcttct atgttaaaaa aataataata
840
aagcagtttt aacctgccca gtatgtcttg ttgctaaaat aaggccctc aaattgaaaa
900
ttnggatacc ctaaataaag taccaattag tgctccaaat actaagatag aatattttag
960
agatgcaatg agcaattaca gtcaggcacg ggttgtcacg cctgtaatcc cagcactttg
1020
ggaggccgag gcgagtggat aacctgaggt caggagttca agaccagcct ggccaacatg
1080
gtgaaacctc catctctact aaaaatacaa aaagtagctg ggcgtggtga caaaaattag
1140
ctgggcgtag tggcaggtgc ctgtaatccc agctactcgg gaagctgagg caggagaatc
1200
acttgaaccc agaaggtaaa ggtttcagtg agctgagatt gcgtcattgc actccagcca
1260
tggcgacaag agtgaaactc tgtcttaaaa ataaaaagag atgcaatgag caattttaaa
1320
tgaagtcagt gtgagtttag tgatcaatag tagacccaat gc
1362
```

```
<210> 4920
<211> 194
<212> PRT
<213> Homo sapiens

<400> 4920
Met Asp Glu Asp Gly Leu Pro Leu Met Gly Ser Gly Ile Asp Leu Thr
1               5                   10                  15
Lys Val Pro Ala Ile Gln Gln Lys Arg Thr Val Ala Phe Leu Asn Gln
            20                  25                  30
Phe Val Val His Thr Val Gln Phe Leu Asn Arg Phe Ser Thr Val Cys
        35                  40                  45
Glu Glu Lys Leu Ala Asp Leu Ser Leu Arg Ile Gln Gln Ile Glu Thr
    50                  55                  60
Thr Leu Asn Ile Leu Asp Ala Lys Leu Ser Ser Ile Pro Gly Leu Asp
65                  70                  75                  80
Asp Val Thr Val Glu Val Ser Pro Leu Asn Val Thr Ser Val Thr Asn
                85                  90                  95
Gly Ala His Pro Glu Ala Thr Ser Glu Gln Pro Gln Gln Asn Ser Thr
```

```
                100                 105                 110
Gln Asp Ser Gly Leu Gln Glu Ser Glu Val Ser Ala Glu Asn Ile Leu
            115                 120                 125
Thr Val Ala Lys Asp Pro Arg Tyr Ala Arg Tyr Leu Lys Met Val Gln
        130                 135                 140
Val Gly Val Pro Val Met Ala Ile Arg Asn Lys Met Ile Ser Glu Gly
145                 150                 155                 160
Leu Asp Pro Asp Leu Leu Glu Arg Pro Asp Ala Pro Val Pro Asp Gly
                165                 170                 175
Glu Ser Glu Lys Thr Val Glu Glu Ser Ser Asp Ser Glu Ser Ser Phe
            180                 185                 190
Ser Asp
```

<210> 4921
<211> 1272
<212> DNA
<213> Homo sapiens

<400> 4921
nggttggtag cttctatcct gggggctgag cgactgcggg ccagctcttc ccctactccc
60
tctcggctcc ttgtggccca aaggccctaa ccggggtccg gcggtctgtg ccctagggta
120
tcttccccgt tgccccttttg gggcgggatg gctgcggaag aagaagacga ggtggagtgg
180
gtagtggaga gcatcgcggg gctcctgcga ggcccagact ggtccatccc catcttggac
240
tttgtggaac agaaatgtga agtttttgat gatgaagaag aaagcaaatt gacctataca
300
gagattcatc aggaatacaa agaactagtt gaaaagctgt tagaaggtta cctcaaagaa
360
attggaatta atgaagatca atttcaagaa gcatgcactt ctcctcttgc aaagacccat
420
acatcacagg ccattttgca acctgtgttg gcagcagaag attttactat ctttaaagca
480
atgatggtcc agaaaaacat tgaaatgcag ctgcaagcca ttcgaataat tcaagagaga
540
aatggtgtat tacctgactg cttaaccgat ggctctgatg tggtcagtga ccttgaacac
600
gaagagatga aaatcctgag ggaagttctt agaaaatcaa aagaggaata tgaccaggaa
660
gaagaaagga agaggaaaaa acagttatca gaggctaaaa cagaagagcc cacagtgcat
720
tccagtgaag ctgcaataat gaataattcc caaggggatg gtgaacattt tgcacaccca
780
ccctcagaag ttaaaatgca ttttgctaat cagtcaatag aacctttggg aagaaaagtg
840
gaaaggtctg aaacttcctc cctcccacaa aaaggcctga agattcctgg cttagagcat
900
gcgagcattg aaggaccaat agcaaactta tcagtacttg aacagaaga acttcggcaa
960
cgagaacact atctcaagca gaagagagat aagttgatgt ccatgagaaa ggatatgagg
1020
```

```
actaaacaga tacaaaatat ggagcagaaa ggaaaaccca ctggggaggt agaggaaatg
1080
acagagaaac cagaaatgac agcagaggag aagcaaacat tactaaagag gagattgctt
1140
gcagagaaac tcaaagaaga agttattaat aagtaataat taagaacaat ttaacaaaat
1200
ggaagttcaa attgtcttaa aaataaatta tttagtcctt acactgaaaa aaaaaaaaaa
1260
aaaaaataaa aa
1272


<210> 4922
<211> 342
<212> PRT
<213> Homo sapiens

<400> 4922
Met Ala Ala Glu Glu Glu Asp Glu Val Glu Trp Val Val Glu Ser Ile
1               5                   10                  15
Ala Gly Leu Leu Arg Gly Pro Asp Trp Ser Ile Pro Ile Leu Asp Phe
            20                  25                  30
Val Glu Gln Lys Cys Glu Val Phe Asp Asp Glu Glu Glu Ser Lys Leu
        35                  40                  45
Thr Tyr Thr Glu Ile His Gln Glu Tyr Lys Glu Leu Val Glu Lys Leu
    50                  55                  60
Leu Glu Gly Tyr Leu Lys Glu Ile Gly Ile Asn Glu Asp Gln Phe Gln
65                  70                  75                  80
Glu Ala Cys Thr Ser Pro Leu Ala Lys Thr His Thr Ser Gln Ala Ile
                85                  90                  95
Leu Gln Pro Val Leu Ala Ala Glu Asp Phe Thr Ile Phe Lys Ala Met
            100                 105                 110
Met Val Gln Lys Asn Ile Glu Met Gln Leu Gln Ala Ile Arg Ile Ile
        115                 120                 125
Gln Glu Arg Asn Gly Val Leu Pro Asp Cys Leu Thr Asp Gly Ser Asp
    130                 135                 140
Val Val Ser Asp Leu Glu His Glu Glu Met Lys Ile Leu Arg Glu Val
145                 150                 155                 160
Leu Arg Lys Ser Lys Glu Glu Tyr Asp Gln Glu Glu Glu Arg Lys Arg
                165                 170                 175
Lys Lys Gln Leu Ser Glu Ala Lys Thr Glu Glu Pro Thr Val His Ser
            180                 185                 190
Ser Glu Ala Ala Ile Met Asn Asn Ser Gln Gly Asp Gly Glu His Phe
        195                 200                 205
Ala His Pro Pro Ser Glu Val Lys Met His Phe Ala Asn Gln Ser Ile
    210                 215                 220
Glu Pro Leu Gly Arg Lys Val Glu Arg Ser Glu Thr Ser Ser Leu Pro
225                 230                 235                 240
Gln Lys Gly Leu Lys Ile Pro Gly Leu Glu His Ala Ser Ile Glu Gly
                245                 250                 255
Pro Ile Ala Asn Leu Ser Val Leu Gly Thr Glu Glu Leu Arg Gln Arg
            260                 265                 270
Glu His Tyr Leu Lys Gln Lys Arg Asp Lys Leu Met Ser Met Arg Lys
        275                 280                 285
Asp Met Arg Thr Lys Gln Ile Gln Asn Met Glu Gln Lys Gly Lys Pro
```

```
         290                    295                   300
Thr Gly Glu Val Glu Glu Met Thr Glu Lys Pro Glu Met Thr Ala Glu
305                        310                   315                   320
Glu Lys Gln Thr Leu Leu Lys Arg Arg Leu Leu Ala Glu Lys Leu Lys
                    325                   330                   335
Glu Glu Val Ile Asn Lys
                340
```

```
<210> 4923
<211> 765
<212> DNA
<213> Homo sapiens
```

```
<400> 4923
tctccagccc cggatgaggg gcctcaggct tcggctgggc cacaggaggt ggggtctctg
60
aagccttctg ctcctnctcc aaggacctca tttagctccg ccagcaggtc atcatcagcc
120
tccaagtcgt cctcatccgt cccctcctcc tcatcctcat ccgggtctct catgcacagg
180
ctggccatct tctcaatggc ctccatcggc aagggacctt tgcctttgag cttctccagg
240
gctgggggct ggcccccgac caaagccaag aactcagcct ccagttcttc atcgttagcc
300
ccgtcctcag ggatcatcag gccatctggg gagaggtcaa ccagcaggcc cagctggcgg
360
gcggccgcgg cgcctctgcc cggggggtccc ggggggtcctt cctcttgtgc atcttcaagg
420
ctggatgccc ggaccacctg cccccaagcc cggccttgcc ctgccccttc cccgggctct
480
gtcgccgcgc actcgccctt cctgagtcct gcactcctcg tcggcgccct gcggccggtc
540
gatcccgagc cctcgcttcc ctgcttggcc gtcccacttc cgcctcgggc ctcgggcgcc
600
gccgcacctn ggagcgcggc cagctgggct cgccgaggtc tgccgagccg aaactacaac
660
tcccggcaga tttctcaagg ggaagataaa atgactaaga ggaagaagct gcggacctca
720
gctcccctga tgaggaaaca ggatctccct gccggctcct ccgtc
765
```

```
<210> 4924
<211> 255
<212> PRT
<213> Homo sapiens
```

```
<400> 4924
Ser Pro Ala Pro Asp Glu Gly Pro Gln Ala Ser Ala Gly Pro Gln Glu
1                   5                   10                  15
Val Gly Ser Leu Lys Pro Ser Ala Pro Xaa Pro Arg Thr Ser Phe Ser
                20                  25                  30
Ser Ala Ser Arg Ser Ser Ser Ala Ser Lys Ser Ser Ser Ser Val Pro
            35                  40                  45
Ser Ser Ser Ser Ser Ser Gly Ser Leu Met His Arg Leu Ala Ile Phe
```

```
         50                      55                      60
Ser Met Ala Ser Ile Gly Lys Gly Pro Leu Pro Leu Ser Phe Ser Arg
65                      70                      75                      80
Ala Gly Gly Trp Pro Pro Thr Lys Ala Lys Asn Ser Ala Ser Ser Ser
                    85                      90                      95
Ser Ser Leu Ala Pro Ser Ser Gly Ile Ile Arg Pro Ser Gly Glu Arg
                100                     105                     110
Ser Thr Ser Arg Pro Ser Trp Arg Ala Ala Ala Ala Pro Leu Pro Gly
            115                     120                     125
Gly Pro Gly Gly Pro Ser Ser Cys Ala Ser Ser Arg Leu Asp Ala Arg
        130                     135                     140
Thr Thr Cys Pro Gln Ala Arg Pro Cys Pro Ala Pro Ser Pro Gly Ser
145                     150                     155                     160
Val Ala Ala His Ser Pro Phe Leu Ser Pro Ala Leu Leu Val Gly Ala
                165                     170                     175
Leu Arg Pro Val Asp Pro Glu Pro Ser Leu Pro Cys Leu Ala Val Pro
            180                     185                     190
Leu Pro Pro Arg Ala Ser Gly Ala Ala Ala Pro Xaa Ser Ala Ala Ser
            195                     200                     205
Trp Ala Arg Arg Gly Leu Pro Ser Arg Asn Tyr Asn Ser Arg Gln Ile
        210                     215                     220
Ser Gln Gly Glu Asp Lys Met Thr Lys Arg Lys Lys Leu Arg Thr Ser
225                     230                     235                     240
Ala Pro Leu Met Arg Lys Gln Asp Leu Pro Ala Gly Ser Ser Val
                245                     250                     255
```

<210> 4925
<211> 374
<212> DNA
<213> Homo sapiens

<400> 4925
gccaatttgg agaaagagct ccaggagatg gaggcacggt acgagaagga gtttggagat
60
ggatcggatg aaaatgaaat ggaagaacat gaactcaaag atgaggagga tggtaaagac
120
agtgatgagg ccgaggacgc tgagctctat gatgaccttt actgcccagc atgtgacaaa
180
tcgttcaaga cagaaaaggc catgaagaat cacgagaagt caaagaagca tcgggaaatg
240
gtggccttgc taaaacaaca gctggaggag gaagaagaaa attttttcaag acctcaaatt
300
gatgaaaatc cattagatga caattctgag gaagaaatgg aagatgcacc aaaacaaaag
360
ctttctaaaa aaaa
374

<210> 4926
<211> 124
<212> PRT
<213> Homo sapiens

<400> 4926
Ala Asn Leu Glu Lys Glu Leu Gln Glu Met Glu Ala Arg Tyr Glu Lys

```
 1                  5                    10                     15
Glu Phe Gly Asp Gly Ser Asp Glu Asn Glu Met Glu Glu His Glu Leu
                20                   25                   30
Lys Asp Glu Glu Asp Gly Lys Asp Ser Asp Glu Ala Glu Asp Ala Glu
            35                   40                   45
Leu Tyr Asp Asp Leu Tyr Cys Pro Ala Cys Asp Lys Ser Phe Lys Thr
        50                   55                   60
Glu Lys Ala Met Lys Asn His Glu Lys Ser Lys His Arg Glu Met
65                   70                   75                   80
Val Ala Leu Leu Lys Gln Gln Leu Glu Glu Glu Glu Glu Asn Phe Ser
                85                   90                   95
Arg Pro Gln Ile Asp Glu Asn Pro Leu Asp Asp Asn Ser Glu Glu Glu
            100                  105                  110
Met Glu Asp Ala Pro Lys Gln Lys Leu Ser Lys Lys
        115                  120
```

<210> 4927
<211> 1649
<212> DNA
<213> Homo sapiens

<400> 4927
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atccaccgct gagctgggag aaagatggcg gccgtgcgac aggatttggc ccagctcatg
60
aattcgagcg ctctcataa agatctggct ggcaagtatc gtcagatcct ggaaaaagcc
120
attcagttat ctggagcaga acaactagaa gctttgaaag cttttgtgga agcaatggta
180
aatgagaatg tcagtctcgt gatctcgcgg cagttgctga ctgatttttg cacacatctt
240
cctaacttgc ctgatagcac agccaaagaa atctatcact tcaccttgga aaagatccag
300
cctagagtca tttcatttga ggagcaggtt gcttccataa gacagcatct tgcatctata
360
tatgagaaag aagaagattg gagaaatgca gcccaagtgt tggtgggaat tcctttggaa
420
acaggacaaa aacagtacaa tgtagattat aaactggaga cttacttgaa gattgctagg
480
ctatatctgg aggatgatga tccagtccag gcagaggctt acataaatcg agcatcgttg
540
cttcagaatg aatcaaccaa tgaacaatta cagatacatt ataaggtatg ctatgcacgt
600
gttcttgatt atagaagaaa attcattgaa gctgcacaaa ggtacaatga gctctcttac
660
aagacaatag tccacgaaag tgaaagacta gaggccttaa aacatgcttt gcactgtacg
720
atcttagcat cagcaggaca gcagcgttct cggatgctgg ctaccctttt taaggatgaa
780
aggtgccagc aacttgctgc ttatgggatc ctagagaaaa tgtatctaga caggatcatc
840
agagggaacc agcttcaaga atttgctgcc atgctgatgc ctcaccaaaa agcaactaca
900
gctgatggtt ccagcatctt ggacagagct gttattgaac acaatttgtt gtctgcaagc
960
```

aaattatata ataatattac cttcgaagaa cttggagctc ttttagagat ccctgcagct
1020

aaggcggaaa agatagcatc tcaaatgata accgaaggac gtatgaatgg atttattgac
1080

cagattgatg gaatagttca ttttgaaaca cgagaagccc tgccaacgtg ggataagcag
1140

atccaatcac tttgtttcca agtgaataac cttttggaga aaattagtca aacagcacca
1200

gaatggacag cacaagccat ggaagcccag atggctcagt gaatccttgc agaacttctg
1260

tgcacatgac atctttttcc atgttgtgca gatcagtttc actatctcca aagcatttgc
1320

atcatgacct tatacatttc aatccctttt atgctggatt ccgtttaaag aagacattat
1380

tagagcagga agtacaagca tttaaaatat gtagttccca tatatttcag ggtctctgtg
1440

tattaagcta actcagatgt tttgaaagct ttttctttaa acagaggtga aatatctgtg
1500

gctaaaaagt ttgagatttg tgataacttt gtagtcatgt aaaacttaag tgcttcatgc
1560

ctctccaaat gtggttattc taataaatgg agaaatgagc caaaaaaaag tagtactttg
1620

tttttaaaaa aaaaaaaaaa aaaaaaaaa
1649

<210> 4928
<211> 405
<212> PRT
<213> Homo sapiens

<400> 4928
Met Ala Ala Val Arg Gln Asp Leu Ala Gln Leu Met Asn Ser Ser Gly
1   5   10   15
Ser His Lys Asp Leu Ala Gly Lys Tyr Arg Gln Ile Leu Glu Lys Ala
            20   25   30
Ile Gln Leu Ser Gly Ala Glu Gln Leu Glu Ala Leu Lys Ala Phe Val
            35   40   45
Glu Ala Met Val Asn Glu Asn Val Ser Leu Val Ile Ser Arg Gln Leu
        50   55   60
Leu Thr Asp Phe Cys Thr His Leu Pro Asn Leu Pro Asp Ser Thr Ala
65   70   75   80
Lys Glu Ile Tyr His Phe Thr Leu Glu Lys Ile Gln Pro Arg Val Ile
                85   90   95
Ser Phe Glu Glu Gln Val Ala Ser Ile Arg Gln His Leu Ala Ser Ile
            100   105   110
Tyr Glu Lys Glu Glu Asp Trp Arg Asn Ala Ala Gln Val Leu Val Gly
            115   120   125
Ile Pro Leu Glu Thr Gly Gln Lys Gln Tyr Asn Val Asp Tyr Lys Leu
        130   135   140
Glu Thr Tyr Leu Lys Ile Ala Arg Leu Tyr Leu Glu Asp Asp Asp Pro
145   150   155   160
Val Gln Ala Glu Ala Tyr Ile Asn Arg Ala Ser Leu Leu Gln Asn Glu
                165   170   175
Ser Thr Asn Glu Gln Leu Gln Ile His Tyr Lys Val Cys Tyr Ala Arg

```
                    180                   185                   190
 Val Leu Asp Tyr Arg Arg Lys Phe Ile Glu Ala Ala Gln Arg Tyr Asn
             195                   200                   205
 Glu Leu Ser Tyr Lys Thr Ile Val His Glu Ser Glu Arg Leu Glu Ala
         210                   215                   220
 Leu Lys His Ala Leu His Cys Thr Ile Leu Ala Ser Ala Gly Gln Gln
 225                   230                   235                   240
 Arg Ser Arg Met Leu Ala Thr Leu Phe Lys Asp Glu Arg Cys Gln Gln
                 245                   250                   255
 Leu Ala Ala Tyr Gly Ile Leu Glu Lys Met Tyr Leu Asp Arg Ile Ile
             260                   265                   270
 Arg Gly Asn Gln Leu Gln Glu Phe Ala Ala Met Leu Met Pro His Gln
             275                   280                   285
 Lys Ala Thr Thr Ala Asp Gly Ser Ser Ile Leu Asp Arg Ala Val Ile
         290                   295                   300
 Glu His Asn Leu Leu Ser Ala Ser Lys Leu Tyr Asn Asn Ile Thr Phe
 305                   310                   315                   320
 Glu Glu Leu Gly Ala Leu Leu Glu Ile Pro Ala Ala Lys Ala Glu Lys
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 Ile Ala Ser Gln Met Ile Thr Glu Gly Arg Met Asn Gly Phe Ile Asp
             340                   345                   350
 Gln Ile Asp Gly Ile Val His Phe Glu Thr Arg Glu Ala Leu Pro Thr
             355                   360                   365
 Trp Asp Lys Gln Ile Gln Ser Leu Cys Phe Gln Val Asn Asn Leu Leu
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<213>  Homo sapiens

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4102

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<212> PRT
<213> Homo sapiens

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Val Gln Gln Phe Gly Tyr Gln Arg Arg Ala Ser Asp Asp Gly Lys Leu
        35   40   45
Thr Asp Pro Ser Lys Thr Ser Asn Thr Ile Arg Val Phe Leu Pro Asn
    50   55   60
Lys Gln Arg Thr Val Val Asn Val Arg Asn Gly Met Ser Leu His Asp
65   70   75   80
Cys Leu Met Lys Ala Leu Lys Val Arg Gly Leu Gln Pro Glu Cys Cys
                85   90   95
Ala Val Phe Arg Leu Leu His Glu His Lys Gly Lys Lys Ala Arg Leu
            100   105   110
Asp Trp Asn Thr Asp Ala Ala Ser Leu Ile Gly Glu Glu Leu Gln Val
            115   120   125
Asp Phe Leu Asp His Val Pro Leu Thr Thr His Asn Phe Ala Arg Lys
        130   135   140
Thr Phe Leu Lys Leu Ala Phe Cys Asp Ile Cys Gln Lys Phe Leu Leu
145   150   155   160
Asn Gly Phe Arg Cys Gln Thr Cys Gly Tyr Lys Phe His Glu His Cys
                165   170   175
Ser Thr Lys Val Pro Thr Met Cys Val Asp Trp Ser Asn Ile Arg Gln
            180   185   190
Leu Leu Leu Phe Pro Asn Ser Thr Ile Gly Asp Ser Gly Val Pro Ala
            195   200   205
Leu Pro Ser Leu Thr Met Arg Arg Met Arg Glu Ser Val Ser Arg Met
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Pro Val Ser Ser Gln His Arg Tyr Ser Thr Pro His Ala Phe Thr Phe

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                260                     265                     270
Asp Ser Arg Met Ile Glu Asp Ala Ile Arg Ser His Ser Glu Ser Ala
                275                     280                     285
Ser Pro Ser Ala Leu Ser Ser Ser Pro Asn Asn Leu Ser Pro Thr Gly
        290                     295                     300
Trp Ser Gln Pro Lys Thr Pro Val Pro Ala Gln Arg Glu Arg Ala Pro
305                     310                     315                     320
Val Ser Gly Thr Gln Glu Lys Asn Lys Ile Arg Pro Arg Gly Gln Arg
                325                     330                     335
Asp Ser Ser Tyr Tyr Trp Glu Ile Glu Ala Ser Glu Val Met Leu Ser
                340                     345                     350
Thr Arg Ile Gly Ser Gly Ser Phe Gly Thr Val Tyr Lys Gly Lys Trp
                355                     360                     365
His Gly Asp Val Ala Val Lys Ile Leu Lys Val Val Asp Pro Thr Pro
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Glu Gln Phe Gln Ala Phe Arg Asn Glu Val Ala Val Leu Arg Lys Thr
385                     390                     395                     400
Arg His Val Asn Ile Leu Leu Phe Met Gly Tyr Met Thr Lys Asp Asn
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Leu Ala Ile Val Thr Gln Trp Cys Glu Gly Ser Ser Leu Tyr Lys His
                420                     425                     430
Leu His Val Gln Glu Thr Lys Phe Gln Met Phe Gln Leu Ile Asp Ile
                435                     440                     445
Ala Arg Gln Thr Ala Gln Gly Met Asp Tyr Leu His Ala Lys Asn Ile
        450                     455                     460
Ile His Arg Asp Met Lys Ser Asn Asn Ile Phe Leu His Glu Gly Leu
465                     470                     475                     480
Thr Val Lys Ile Gly Asp Phe Gly Leu Ala Thr Val Lys Ser Arg Trp
                485                     490                     495
Ser Gly Ser Gln Gln Val Glu Gln Pro Thr Gly Ser Val Leu Trp Met
                500                     505                     510
Ala Pro Glu Val Ile Arg Met Gln Asp Asn Asn Pro Phe Ser Phe Gln
        515                     520                     525
Ser Asp Val Tyr Ser Tyr Gly Ile Val Leu Tyr Glu Leu Met Thr Gly
        530                     535                     540
Glu Leu Pro Tyr Ser His Ile Asn Asn Arg Asp Gln Ile Ile Phe Met
545                     550                     555                     560
Val Gly Arg Gly Tyr Ala Ser Pro Asp Leu Ser Lys Leu Tyr Lys Asn
                565                     570                     575
Cys Pro Lys Ala Met Lys Arg Leu Val Ala Asp Cys Val Lys Lys Val
                580                     585                     590
Lys Glu Glu Arg Pro Leu Phe Pro Gln Ile Leu Ser Ser Ile Glu Leu
                595                     600                     605
Leu Gln His Ser Leu Pro Lys Ile Asn Arg Ser Ala Ser Glu Pro Ser
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Leu His Arg Ala Ala His Thr Glu Asp Ile Asn Ala Cys Thr Leu Thr
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Thr Ser Pro Arg Leu Pro Val Phe
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<213> Homo sapiens

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<213> Homo sapiens

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            20   25   30
Thr Gln Gly Thr Arg Lys Ile Leu Tyr Pro Tyr Ala His Leu Ser Ala
        35   40   45
Glu Asp Phe Asn Ile Tyr Gly His Gly Gly Arg Gln Phe Trp Leu Val
    50   55   60
Ser Ser Cys Phe Phe Phe Leu Leu Gly Gly Ala Ser Thr Cys Met Arg
65   70   75   80
Ala Ser Trp His Arg Ser Thr
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<212> DNA
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<211> 181
<212> PRT
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            20   25   30
Ala Tyr Ile Glu Ser Gln Gly Ala His Arg Ala Gly Leu Ala Lys Ile
        35   40   45
Ile Pro Pro Lys Glu Trp Lys Pro Arg Gln Thr Tyr Asp Asp Ile Asp
    50   55   60
Asp Val Val Ile Pro Ala Pro Ile Gln Gln Val Val Thr Gly Gln Ser
65   70   75   80
Gly Leu Phe Thr Gln Tyr Asn Ile Gln Lys Lys Ala Met Thr Val Gly
                85   90   95
Glu Tyr Arg Arg Leu Ala Asn Ser Glu Lys Tyr Cys Thr Pro Arg His
            100   105   110
Gln Asp Phe Asp Asp Leu Glu Arg Lys Tyr Trp Lys Asn Leu Thr Phe
            115   120   125
Val Ser Pro Ile Tyr Gly Ala Asp Ile Ser Gly Ser Leu Tyr Asp Asp
        130   135   140
Val Ser Met Arg Leu Arg Gly Arg Thr Gly Thr Ser Phe Leu Val Gly
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Gly Gly Gly Arg Ala Leu Asn Gly Thr Leu Pro Trp Gln Met Lys Leu
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Pro Gly Arg Gln Gly
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<210> 4935
<211> 1668
<212> DNA
<213> Homo sapiens

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<210> 4936
<211> 337
<212> PRT
<213> Homo sapiens

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Gly Leu Leu Cys Val Cys Trp Ser Pro Asp Gly Lys Tyr Ile Val Thr
        35                  40                  45
Gly Gly Glu Asp Asp Leu Val Thr Val Trp Ser Phe Val Asp Cys Arg
    50                  55                  60
Val Ile Ala Arg Gly His Gly His Lys Ser Trp Val Ser Val Val Ala
65                  70                  75                  80
Phe Asp Pro Tyr Thr Thr Ser Val Glu Glu Gly Asp Pro Met Glu Phe
                85                  90                  95
Ser Gly Ser Asp Glu Asp Phe Gln Asp Leu Leu His Phe Gly Glu Ile
            100                 105                 110
Glu Gln Ile Val His Ser Pro Gly Ser Pro Asn Gly Thr Leu Gln Thr
        115                 120                 125
Ala Ala Pro Ser Val Thr Tyr Arg Phe Gly Ser Val Gly Gln Asp Thr
    130                 135                 140
Gln Leu Cys Leu Trp Asp Leu Thr Glu Asp Ile Leu Phe Pro His Gln
145                 150                 155                 160
Pro Leu Ser Arg Ala Arg Thr His Thr Asn Val Met Asn Ala Thr Ser
                165                 170                 175
Pro Pro Ala Gly Ser Asn Gly Asn Ser Val Thr Thr Pro Gly Asn Ser
            180                 185                 190
Val Pro Pro Pro Leu Pro Arg Ser Asn Ser Leu Pro His Ser Ala Val
        195                 200                 205
Ser Asn Ala Gly Ser Lys Ser Ser Val Met Asp Gly Ala Ile Ala Ser
    210                 215                 220
Gly Val Ser Lys Phe Ala Thr Leu Ser Leu His Asp Arg Lys Glu Arg
225                 230                 235                 240
His His Glu Lys Asp His Lys Arg Asn His Ser Met Gly His Ile Ser
                245                 250                 255
Ser Lys Ser Ser Asp Lys Leu Asn Leu Val Thr Lys Thr Lys Thr Asp
            260                 265                 270
Pro Ala Lys Thr Leu Gly Thr Pro Leu Cys Pro Arg Met Glu Asp Val
        275                 280                 285
Pro Leu Leu Glu Pro Leu Ile Cys Lys Lys Ile Ala His Glu Arg Leu
    290                 295                 300
Thr Val Leu Ile Phe Leu Glu Asp Cys Ile Val Thr Ala Cys Gln Glu
```

```
      305                  310                  315                  320
      Gly Phe Ile Cys Thr Trp Gly Arg Pro Gly Lys Val Val Ser Phe Asn
                      325                  330                  335
      Pro
```

```
<210> 4937
<211> 715
<212> DNA
<213> Homo sapiens

<400> 4937
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60
gtgttccttt gtttgccagg gaatgtttcg ggaaggctgt ggagtgggac ggtggggatg
120
aagcggggag tcccacactc tctgggtcca ggcacaaagc tatcctccgt tgttctgatc
180
tgcagagcca gcgccctcag caggtaccta gtggtggcag agccgtggcc tacacgttcc
240
caaggaggcc gccagccggg ctgtaccctt accttggggg tgtgtgcaga tggaaggtgg
300
gaagagacag accaacagga agtgttctct tcaggggttg ccagccccac cctgaatctc
360
agagcatcct cctccccggc aaaggccagg gcactgtccc gaccatgggc tctgtacaag
420
cagagggagg cacccgagct ggtgtgagca gctacgtggg gtggtggtcc agggaacaga
480
gggagggcac tggagccatt gcctgcctag ttcagtcctc aaatgggtcc aagccagctc
540
aggtctgcag cgccaggccc agggtacctg gcagcccagc cgatggtacc attggctggt
600
gctcccactg aggtcttgag aaggtaatgg ggagagccac ttgcccctgc ctctgtcccc
660
agtggacttc tttttgttca aggccaaatg ccaccccgtc agagagagga ccggt
715
```

```
<210> 4938
<211> 109
<212> PRT
<213> Homo sapiens

<400> 4938
Met Lys Arg Gly Val Pro His Ser Leu Gly Pro Gly Thr Lys Leu Ser
1               5                   10                  15
Ser Val Val Leu Ile Cys Arg Ala Ser Ala Leu Ser Arg Tyr Leu Val
                20                  25                  30
Val Ala Glu Pro Trp Pro Thr Arg Ser Gln Gly Gly Arg Gln Pro Gly
            35                  40                  45
Cys Thr Leu Thr Leu Gly Val Cys Ala Asp Gly Arg Trp Glu Glu Thr
        50                  55                  60
Asp Gln Gln Glu Val Phe Ser Ser Gly Val Ala Ser Pro Thr Leu Asn
65                  70                  75                  80
Leu Arg Ala Ser Ser Ser Pro Ala Lys Ala Arg Ala Leu Ser Arg Pro
```

```
                       85                   90                   95
         Trp Ala Leu Tyr Lys Gln Arg Glu Ala Pro Glu Leu Val
                   100                 105


<210> 4939
<211> 730
<212> DNA
<213> Homo sapiens


<400> 4939
nnacgcgtcc acttttctag aagcccccca gcctccacca tggctcccat cccctctgcc
60
ctcgctgtct gggagcccgc gggatccagc ccacagctgt cctctgcgcc tgcagattcc
120
tcggcctcta cccgccctcc ccaaggtcct ccctccctgg actcaaaagc ctctacttgg
180
ctgcctctgc cagtcacctc ttcctctgct gagccctcca gaccaaattc ttgcccacct
240
gcatgctctc ctgctgctgc ctcttccttt tctttcgagt cccagccttg cccaagcgcc
300
ccttccaaag cttcaccagc gccagcagcg ctgatgtgtg ggaccacatc acccccccata
360
atcccagcag ccacagagcc agtctgtgca tcctcacggt ccgggaggcc cacagccacc
420
gcttgcagcc tccagcctct tctggatgtt ctgtcagcct ccgcctcctc atcctcagtt
480
tctctggcat aggcctctcc cagtgacggg caaggccctg cgtctgcccc tgtgcttccg
540
tccagctcct ggttctctga gacagatgcc tctccctcct cagttccaca tcccgcgtcc
600
tgggttgtca gcccctcccc gcctgcctct gggacttctg atagttcaga ctctcggtct
660
ccttcagcct cagccgccag ggcctggcct cccgcagtct cctcctcctc ccgctgctcg
720
ccatcggccg
730


<210> 4940
<211> 158
<212> PRT
<213> Homo sapiens


<400> 4940
Ser Arg Ser Pro Pro Ala Ser Thr Met Ala Pro Ile Pro Ser Ala Leu
1                   5                   10                  15
Ala Val Trp Glu Pro Ala Gly Ser Ser Pro Gln Leu Ser Ser Ala Pro
            20                  25                  30
Ala Asp Ser Ser Ala Ser Thr Arg Pro Pro Gln Gly Pro Pro Ser Leu
        35                  40                  45
Asp Ser Lys Ala Ser Thr Trp Leu Pro Leu Pro Val Thr Ser Ser Ser
    50                  55                  60
Ala Glu Pro Ser Arg Pro Asn Ser Cys Pro Pro Ala Cys Ser Pro Ala
65                  70                  75                  80
Ala Ala Ser Ser Phe Ser Phe Glu Ser Gln Pro Cys Pro Ser Ala Pro
```

```
                    85                    90                    95
Ser Lys Ala Ser Pro Ala Pro Ala Ala Leu Met Cys Gly Thr Thr Ser
               100                   105                   110
Pro Pro Ile Ile Pro Ala Ala Thr Glu Pro Val Cys Ala Ser Ser Arg
           115                   120                   125
Ser Gly Arg Pro Thr Ala Thr Ala Cys Ser Leu Gln Pro Leu Leu Asp
       130                   135                   140
Val Leu Ser Ala Ser Ala Ser Ser Ser Ser Val Ser Leu Ala
145                   150                   155
```

<210> 4941
<211> 1718
<212> DNA
<213> Homo sapiens

<400> 4941
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ntcatgaccg aggttgtggt ggccctgctc atgtgccccc tcccactgaa cagcaatgga
60
gcagagatgt ggaggcagct gatactgtgt aagcccagct gtgatgtccg agacctcctg
120
gatctgctcc tgggcagcct gaaggagaag cccgtcacca aggagggccg ggcttccatc
180
gtgcccctgg cggcagccag cggcctgtgc gagctcctgt ccgtcaacag ctgcatgggc
240
cgtgtgaggc gcatctaccc tcagctgctc ctggccctgc tcattcaggt ccattaccac
300
atcggcctca acctgcctgg ctgcgtggct cctcccaagg acaccaagaa gggtgcacag
360
ccctctccct tcgtacctgt gcgctgggtg gtgaaagtgg tgaaaaccct gctactgagg
420
atgggctgct cttatgagac cacgtttctg gaggaccagg gtggctggga gctcatggag
480
caggtggaga gccaccaccg cggagtggcc ttgctggcaa gggccatggt gcagtactcc
540
tgccaggagc tgtgccgcat cctctacctg ctcatcccgc tcctggagcg aggcgacgag
600
aagcacagga tcacggccac cgccttcttc gtggagctcc tccagatgga gcaggtgcgc
660
cggatccccg aggaatactc tctggggcgg atggcagaag gcctgagcca ccacgacccc
720
atcatgaagg tgctgtccat tcgaggcctg gtcatcctgg cccgcaggtc tgagaagacc
780
gccaaggtga aggccctcct gccttccatg gtgaagggcc tgaagaacat ggatgggatg
840
ctggtggtgg aagcggtcca caacctcaag gctgtcttca ggggcgggga ccagaagctg
900
atggacagtg cggtctatgt ggagatgctg cagatcctgc tgccgcactt cagcgacgca
960
cgagaggtcg tgcgctcctc ctgcatcaac ctgtatggga aggtggtcca gaagcttcgg
1020
gcaccacgca ctcaggccat ggaggagcag ctggtcagca ccttggtgcc cctactgctg
1080
accatgcagg agggcaactc caaggtaagc cagaagtgtg tgaagaccct gttacgctgt
1140
```

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tcttacttca tggcttggga gttgccaaaa agagcttata gccggaagcc ctgggacaac
1200
caacagcaga cagtggccaa aatttgcaag tgccttgtga acacccaccg agacagcgcc
1260
ttcatattcc tcagccagag cctggagtat gccaagaact cacgggcctc cctccggaag
1320
tgctcagtca tgttcatagg gtccctggtc ccctgcatgg agagcataat gacagaagat
1380
cgtctgaatg aagtgaaagc tgctctggat aacttgagac atgacccaga agcatcagtg
1440
tgcatctacg cagcccaggt ccaggaccac atcctggcca gctgctggca gaactcctgg
1500
ctgccgcacg ggaactcatg ggtgtgttac tcagccacca cccaccgctg gagccccagc
1560
tgtgagaacc tgcccacttc ccaccagcgg cgctcctgga tcatgcaggc actgggctcc
1620
tggaagatgt ccttgaagaa gtgacgtccc tgagccccaa accctcctca gggtggttga
1680
gttccagcca tgctccctat aaatgtcatg tggcttaa
1718


<210> 4942
<211> 469
<212> PRT
<213> Homo sapiens


<400> 4942
Met Gly Arg Val Arg Arg Ile Tyr Pro Gln Leu Leu Leu Ala Leu Leu
1               5                   10                  15
Ile Gln Val His Tyr His Ile Gly Leu Asn Leu Pro Gly Cys Val Ala
            20                  25                  30
Pro Pro Lys Asp Thr Lys Lys Gly Ala Gln Pro Ser Pro Phe Val Pro
        35                  40                  45
Val Arg Trp Val Val Lys Val Val Lys Thr Leu Leu Leu Arg Met Gly
    50                  55                  60
Cys Ser Tyr Glu Thr Thr Phe Leu Glu Asp Gln Gly Gly Trp Glu Leu
65                  70                  75                  80
Met Glu Gln Val Glu Ser His His Arg Gly Val Ala Leu Leu Ala Arg
                85                  90                  95
Ala Met Val Gln Tyr Ser Cys Gln Glu Leu Cys Arg Ile Leu Tyr Leu
            100                 105                 110
Leu Ile Pro Leu Leu Glu Arg Gly Asp Glu Lys His Arg Ile Thr Ala
        115                 120                 125
Thr Ala Phe Phe Val Glu Leu Leu Gln Met Glu Gln Val Arg Arg Ile
    130                 135                 140
Pro Glu Glu Tyr Ser Leu Gly Arg Met Ala Glu Gly Leu Ser His His
145                 150                 155                 160
Asp Pro Ile Met Lys Val Leu Ser Ile Arg Gly Leu Val Ile Leu Ala
                165                 170                 175
Arg Arg Ser Glu Lys Thr Ala Lys Val Lys Ala Leu Leu Pro Ser Met
            180                 185                 190
Val Lys Gly Leu Lys Asn Met Asp Gly Met Leu Val Val Glu Ala Val
            195                 200                 205
His Asn Leu Lys Ala Val Phe Lys Gly Arg Asp Gln Lys Leu Met Asp
```

```
            210                    215                    220
Ser Ala Val Tyr Val Glu Met Leu Gln Ile Leu Leu Pro His Phe Ser
225                    230                    235                    240
Asp Ala Arg Glu Val Val Arg Ser Ser Cys Ile Asn Leu Tyr Gly Lys
                245                    250                    255
Val Val Gln Lys Leu Arg Ala Pro Arg Thr Gln Ala Met Glu Glu Gln
                260                    265                    270
Leu Val Ser Thr Leu Val Pro Leu Leu Leu Thr Met Gln Glu Gly Asn
                275                    280                    285
Ser Lys Val Ser Gln Lys Cys Val Lys Thr Leu Leu Arg Cys Ser Tyr
        290                    .295                    300
Phe Met Ala Trp Glu Leu Pro Lys Arg Ala Tyr Ser Arg Lys Pro Trp
305                    310                    315                    320
Asp Asn Gln Gln Gln Thr Val Ala Lys Ile Cys Lys Cys Leu Val Asn
                325                    330                    335
Thr His Arg Asp Ser Ala Phe Ile Phe Leu Ser Gln Ser Leu Glu Tyr
                340                    345                    350
Ala Lys Asn Ser Arg Ala Ser Leu Arg Lys Cys Ser Val Met Phe Ile
        355                    360                    365
Gly Ser Leu Val Pro Cys Met Glu Ser Ile Met Thr Glu Asp Arg Leu
        370                    375                    380
Asn Glu Val Lys Ala Ala Leu Asp Asn Leu Arg His Asp Pro Glu Ala
385                    390                    395                    400
Ser Val Cys Ile Tyr Ala Ala Gln Val Gln Asp His Ile Leu Ala Ser
                405                    410                    415
Cys Trp Gln Asn Ser Trp Leu Pro His Gly Asn Ser Trp Val Cys Tyr
                420                    425                    430
Ser Ala Thr Thr His Arg Trp Ser Pro Ser Cys Glu Asn Leu Pro Thr
        435                    440                    445
Ser His Gln Arg Arg Ser Trp Ile Met Gln Ala Leu Gly Ser Trp Lys
        450                    455                    460
Met Ser Leu Lys Lys
465


<210> 4943
<211> 1020
<212> DNA
<213> Homo sapiens


<400> 4943
nnacgcgtgg gtgaggaagg gcaggtctag gtaaggctgt cggtgacttt ggggggtctgc
60
agcaaggggc gatggctgcg aagtctacgg gggtctccaa ccttgtagag tcgccaggaa
120
tagggcgaat ccacttcatt agtgaccagc tcgggcggtt cacgtgcatc acacaaataa
180
cttggccttt ttctgcctca gttgggggat ttcttaaacg tagaataccc gcgtttccgc
240
tgccgtaatt tcctctcagg cgcaattact ctcttccata ttggttaaca gtagaaggct
300
cagtttctct gctcatcaca cggccttcgg cactgtagct ttgggtggtg ggctgcagat
360
taattttgta accaccttaa gaaaaatacg gaactctaac tccttgccac tcaagaaatg
420
```

```
tcctcccttt cagaatatgc cttccgcatg tctcgtctca gtgcccggct atttggtgaa
480
gtcaccaggc ctactaattc caagtctatg aaagtggtga aactgtttag tgaactgccc
540
ttggccaaga agaaggagac ttatgattgg tatccaaatc accacactta cgctgaactc
600
atgcagacgc tccgatttct tggactctac agagatgagc atcaggattt tatggatgag
660
caaaaacgac taaagaagct tcgtggaaag gagaaaccaa agaaaggaga agggaaaaga
720
gcagcaaaaa ggaaatagtg ttggtccctc aagagggaga ctttcttcct cagtggcgga
780
gagaagaaag tgcatttatt gtctttccac atattggagg aatgtcatct tcctaaatga
840
agtttatttg gaggaacaca gtcatctcct tggtgaaatc taatccggtt acattgtggc
900
tggtttcttg aacacattct aactgtgcaa aattatcttg gccttggccg tgtaatgtga
960
ggtttacctg attctctaat gaaataaata cctaagttat aaaaaaaaaa aaaaaaaaaa
1020


<210> 4944
<211> 106
<212> PRT
<213> Homo sapiens


<400> 4944
Met Ser Ser Leu Ser Glu Tyr Ala Phe Arg Met Ser Arg Leu Ser Ala
 1               5                  10                  15
Arg Leu Phe Gly Glu Val Thr Arg Pro Thr Asn Ser Lys Ser Met Lys
            20                  25                  30
Val Val Lys Leu Phe Ser Glu Leu Pro Leu Ala Lys Lys Lys Glu Thr
            35                  40                  45
Tyr Asp Trp Tyr Pro Asn His His Thr Tyr Ala Glu Leu Met Gln Thr
        50                  55                  60
Leu Arg Phe Leu Gly Leu Tyr Arg Asp Glu His Gln Asp Phe Met Asp
65                  70                  75                  80
Glu Gln Lys Arg Leu Lys Lys Leu Arg Gly Lys Glu Lys Pro Lys Lys
                85                  90                  95
Gly Glu Gly Lys Arg Ala Ala Lys Arg Lys
            100                 105


<210> 4945
<211> 1792
<212> DNA
<213> Homo sapiens


<400> 4945
actagtaaca atgccccacc tctaaatcta gaggacaagc tacagagggg tttgaagggg
60
aagcaggaat tctggcaaca gtgtgtctca ttcattcctc caggccagga gtaccgcatg
120
tacaacacat atgatgtcca cttttatgct tcctttgccc tcatcatgct ctggcccaaa
180
```

```
cttgagctca gcctacagta tgacatggct ctggccactc tcagggagga cctgacacgg
240
cgacggtacc tgatgagtgg ggtgatggca cctgtgaaaa ggaggaacgt catcccccat
300
gatattgggg acccagatga tgaaccatgg ctccgcgtca atgcatattt aatccatgat
360
actgctgatt ggaaggacct gaacctgaag tttgtgctgc aggtttatcg ggactattac
420
ctcacgggtg atcaaaactt cctgaaggac atgtggcctg tgtgtctagt aagggatgca
480
catgcagtgg ccagtgtgcc aggggtatgg ttggtgtctg gaagagcct agctggttgt
540
tgcctttcct cggtacctag gtcttcaaca tcttggtccc tctctaggct gtgatggaat
600
ctgaaatgaa gtttgacaag gaccatgatg gactcattga aaatggaggc tatgcagacc
660
agacctatga tggatgggtg accacaggcc ccaggttagc gggtaggggt ttccaggagg
720
cctgaggtga gaaactgggc aacaagggat tgtagggctc aagaaagaat gactcattgt
780
ctattacacg gcatgggagc agctggagct gccagtctga cccccaaacc catgtccctg
840
atcagtgctt actgtggagg gctgtggctg gcagctgtgg ctgtgatggt ccagatggct
900
gctctgtgtg gggcacagga catccaggat aagttttctt ctatcctcag ccggggccaa
960
gaagcctatg agagactgct gtggaatggt gagttcgggg agcctaagta gtcttaaggc
1020
agctgagagg acaccaggag ccttattttt ctcttcctcg actccaggcc gctattacaa
1080
ctatgacagc agctctcggc ctcagtctcg tagtgttatg tctgaccagt gtgctggaca
1140
gtggttcctg aaggcctgtg gcctaggaga aggagacact gaggtgtttc ctacccaaca
1200
tgtggtccgt gctctccaaa ctatctttga gctgaacgtc caggcctttg caggaggggc
1260
catgggggct gtgaatggga tgcagcccca tggtgtccct gataaatcca gtgtgcagtc
1320
tgatgaagtc tgggtgggtg tggtctacgg gctggcagct accatgatcc aagaggtaat
1380
gcactccttt tcccatctct ccaccatctg tatcctggcc cagaaaactt cctcaaccac
1440
caaatttctt caaggcataa cccaatgcca tcttgtccgt ctataaagcc tcccattttt
1500
ccctggtatg cattccagct cctgccttca ggcttctgtc tgtgggtcat agttatctcc
1560
tccacttgct gggagctcct tgaaggcaaa gactctactg cctccatcta tccagtggaa
1620
gtggctcttc agagggtgcc aagttagtat gtatgactgt catctctccc aacagggcct
1680
gacttgggag ggcttccaga cagctgaagg ctgctaccgt accgtgtggg agcgcctggg
1740
tctggccttc cagacccccag aggcatactg ccagcagcga gtgttccgcg cg
1792
```

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<210> 4946
<211> 197
<212> PRT
<213> Homo sapiens

<400> 4946
Thr Ser Asn Asn Ala Pro Pro Leu Asn Leu Glu Asp Lys Leu Gln Arg
 1               5                   10                  15
Gly Leu Lys Gly Lys Gln Glu Phe Trp Gln Gln Cys Val Ser Phe Ile
            20                  25                  30
Pro Pro Gly Gln Glu Tyr Arg Met Tyr Asn Thr Tyr Asp Val His Phe
        35                  40                  45
Tyr Ala Ser Phe Ala Leu Ile Met Leu Trp Pro Lys Leu Glu Leu Ser
    50                  55                  60
Leu Gln Tyr Asp Met Ala Leu Ala Thr Leu Arg Glu Asp Leu Thr Arg
65                  70                  75                  80
Arg Arg Tyr Leu Met Ser Gly Val Met Ala Pro Val Lys Arg Arg Asn
                85                  90                  95
Val Ile Pro His Asp Ile Gly Asp Pro Asp Asp Glu Pro Trp Leu Arg
            100                 105                 110
Val Asn Ala Tyr Leu Ile His Asp Thr Ala Asp Trp Lys Asp Leu Asn
            115                 120                 125
Leu Lys Phe Val Leu Gln Val Tyr Arg Asp Tyr Tyr Leu Thr Gly Asp
        130                 135                 140
Gln Asn Phe Leu Lys Asp Met Trp Pro Val Cys Leu Val Arg Asp Ala
145                 150                 155                 160
His Ala Val Ala Ser Val Pro Gly Val Trp Leu Val Ser Gly Lys Ser
                165                 170                 175
Leu Ala Gly Cys Cys Leu Ser Ser Val Pro Arg Ser Ser Thr Ser Trp
            180                 185                 190
Ser Leu Ser Arg Leu
            195

<210> 4947
<211> 2060
<212> DNA
<213> Homo sapiens

<400> 4947
nagtactgga tcccatcctg ggtggggttc tcctagtggt ctgagtgtgc caccaggtct
60
gcagggagga ggaatccatg caggaggtta gaagagtcag aagattttat tggctgtctt
120
cacttgaata acagccctgt ggcattttag atctcgagca ctgggatttg tcaattgtca
180
atgtgatgct tggggactgg catattcgtt gcaaggggtt ttttcacctt ttctgaagct
240
tccttttcc tctgttttaa agcatatcac agtatgggcc attctctgag tgaagaaagt
300
acagagtgaa agtacacccg aagtgagagg gactcagaca tcttgtgtcc tttgctcagc
360
tggaagacta ctaagcacgt agtttcagtc attcagttga tagacatttg aacacttatg
420
```

```
gtggtgccta accccaggcc gagtgtgact cattccacct tgcagttaaa gcagtggaag
480
tgcacgtatg aggccctcaa ctgccttcct gattcagcat agtgttttct tctgggctgc
540
ttcactaaga gaaaacctta cagccaatcc aggacctctc tgatcacctc cccagtggat
600
gtagcattgg taaagtggaa ggaccttgtt ctgtttgtca gtaggagctg atgtgtgtga
660
acggactcct atctctgctt cttcctttgt gtgacagact ggggtatctt tgcccatcct
720
tgcttagacc agtctagacc ctctggccct ctgcattccc agttccaaat gctagggatg
780
gagaatgtgc ttgggcttgc ataagacggg gctatgcccc tggctctcct cagctgtagt
840
cagcattgct agctgcccac aactcacgcc agtgggtgaa gatgctggtc tcagagaacc
900
agagcttggc aggcccctc atacacctct tggagaggta gatgctggtc aactatgcac
960
cattacctgt gagcagagct tactcctctg ccattctctc tccaggccct cagcatcctc
1020
atgctccctc acaacatccc gtccagcctg agcctgctca ccagcatggt ggatgacatg
1080
tggcattacg ctggggacca gtccactgat tttaactggt acacccgccg agccatgctg
1140
gctgccatct acaacacaac agagctggtg atgatgcagg actcctctcc agactttgag
1200
gacacttggc gcttcctgga aaaccgggtt aatgatgcaa tgaacatggg ccacactgcc
1260
aagcaggtaa agtccacagg agaggcactg gtgcaaggac tcatgggtgc agcagtgacg
1320
ctcaagaact tgacangtct aaaccagcgt cggtgagagg aagggggtata agctacaatg
1380
cctagaagag aatgagcgga cagattgaaa gagctttgaa aagtataagg tgccatccac
1440
ataacctggt gttcacgaga acacactaaa ggactcctga gtcactacca cagccacctg
1500
gaaaccacaa ggcatttgat gctaccgttc tggtcaggga ttgggctgct tcttcagttc
1560
ctaataccag accaagcctc ctgatgcctt tctgcactgc aactgtgtga ttgaaaaatg
1620
agatgttcat ccaagcagtc aagccacaga aacccagcat gtccctgtca caatctcatg
1680
ggcaccttga tcatgtctta accttccctt aaccttgggg ctcccaagcc agagtcaagg
1740
tctgacgcca cctcaaggtg acagctcatc tccagcacag cacaggcgtg tgcacacaga
1800
ggtgttcctt gcagccccct ccctctcagg tgtcctgaga tgctgctcct gggagccccc
1860
tcagaaaact gcctcacctg agacaagtgc ctgctggaca gaggtgtgat tccaggcctg
1920
gtgtcacatg acaccagcat gcattgcagg attattagtg tattttgagt ctgtaaaaat
1980
aataaatatg tttgaagtag ttaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa
2040
```

aaaaaaaaaa aaaaaaaaaa
2060

<210> 4948
<211> 127
<212> PRT
<213> Homo sapiens

<400> 4948
Ala Glu Leu Thr Pro Leu Pro Phe Ser Leu Gln Ala Leu Ser Ile Leu
 1   5   10   15
Met Leu Pro His Asn Ile Pro Ser Ser Leu Ser Leu Leu Thr Ser Met
            20   25   30
Val Asp Asp Met Trp His Tyr Ala Gly Asp Gln Ser Thr Asp Phe Asn
            35   40   45
Trp Tyr Thr Arg Arg Ala Met Leu Ala Ala Ile Tyr Asn Thr Thr Glu
    50   55   60
Leu Val Met Met Gln Asp Ser Ser Pro Asp Phe Glu Asp Thr Trp Arg
65   70   75   80
Phe Leu Glu Asn Arg Val Asn Asp Ala Met Asn Met Gly His Thr Ala
                85   90   95
Lys Gln Val Lys Ser Thr Gly Glu Ala Leu Val Gln Gly Leu Met Gly
                100   105   110
Ala Ala Val Thr Leu Lys Asn Leu Thr Xaa Leu Asn Gln Arg Arg
            115   120   125

<210> 4949
<211> 1259
<212> DNA
<213> Homo sapiens

<400> 4949
nngccggcct gtcccccagg ctacttgacg gcgccctgcc accggtgccg ggggctggtg
60
gacaagttta accaggggat ggtggacacc gcaaagaaga actttggcgg cgggaacacg
120
gcttgggagg aaaagacgct gtccaagtac gagtccagcg agattcgcct gctggagatc
180
ctggaggggc tgtgcgagag cagcgacttc gaatgcaatc agatgctaga ggcgcaggag
240
gagcacctgg aggcctggtg gctgcagctg aagagcgaat atcctgactt attcgagtgg
300
ttttgtgtga agacactgaa agtgtgctgc tctccaggaa cctacggtcc cgactgtctc
360
gcatgccagg gcggatccca gaggccctgc agcgggaatg gccactgcag cggagatggg
420
agcagacagg gcgacgggtc ctgccggtgc cacatggggt accagggccc gctgtgcact
480
gactgcatgg acggctactt cagctcgctc cggaacgaga cccacagcat ctgcacagcc
540
tgtgacgagt cctgcaagac gtgctcgggc ctgaccaaca gagactgcgg cgagtgtgaa
600
gtgggctggg tgctggacga gggcgcctgt gtggatgtgg acgagtgtgc ggccgagccg
660

cctccctgca gcgctgcgca gttctgtaag aacgccaacg gctcctacac gtgcgaagag
720

tgtgactcca gctgtgtggg ctgcacaggg gaaggcccag gaaactgtaa agagtgtatc
780

tctggctacg cgagggagca cggacagtgt gcagatgtgg acgagtgctc actagcagaa
840

aaaacctgtg tgaggaaaaa cgaaaactgc tacaatactc cagggagcta cgtctgtgtg
900

tgtcctgacg gcttcgaaga anacggaaga tgcctgtgtg ccgccggcag aggctgaagc
960

cacagaagga gaaagcccga cacagctgcc ctcccgcgaa gacctgtaat gtgccggact
1020

tacccttaaa attattcaga aggatgtccc gtggaaaatg tggccctgag gatgccgtct
1080

cctgcagtgg acagcggcgg ggagaggctg cctgctctct aacggttgat tctcatttgt
1140

cccttaaaca gctgcatttc ttggttgttc ttaaacagac ttgtatattt tgatacagtt
1200

ctttgtaata aaattgacca ttgtaggtaa tcaggaggaa aaaaaaaaaa aaaaaaaa
1259

<210> 4950
<211> 318
<212> PRT
<213> Homo sapiens

<400> 4950
Xaa Pro Ala Cys Pro Pro Gly Tyr Leu Thr Ala Pro Cys His Arg Cys
 1   5   10   15
Arg Gly Leu Val Asp Lys Phe Asn Gln Gly Met Val Asp Thr Ala Lys
            20   25   30
Lys Asn Phe Gly Gly Gly Asn Thr Ala Trp Glu Glu Lys Thr Leu Ser
            35   40   45
Lys Tyr Glu Ser Ser Glu Ile Arg Leu Leu Glu Ile Leu Glu Gly Leu
        50   55   60
Cys Glu Ser Ser Asp Phe Glu Cys Asn Gln Met Leu Glu Ala Gln Glu
65   70   75   80
Glu His Leu Glu Ala Trp Trp Leu Gln Leu Lys Ser Glu Tyr Pro Asp
                85   90   95
Leu Phe Glu Trp Phe Cys Val Lys Thr Leu Lys Val Cys Cys Ser Pro
            100   105   110 .
Gly Thr Tyr Gly Pro Asp Cys Leu Ala Cys Gln Gly Gly Ser Gln Arg
        115   120   125
Pro Cys Ser Gly Asn Gly His Cys Ser Gly Asp Gly Ser Arg Gln Gly
        130   135   140
Asp Gly Ser Cys Arg Cys His Met Gly Tyr Gln Gly Pro Leu Cys Thr
145   150   155   160
Asp Cys Met Asp Gly Tyr Phe Ser Ser Leu Arg Asn Glu Thr His Ser
                165   170   175
Ile Cys Thr Ala Cys Asp Glu Ser Cys Lys Thr Cys Ser Gly Leu Thr
            180   185   190
Asn Arg Asp Cys Gly Glu Cys Glu Val Gly Trp Val Leu Asp Glu Gly
        195   200   205
Ala Cys Val Asp Val Asp Glu Cys Ala Ala Glu Pro Pro Pro Cys Ser

```
        210                 215                 220
Ala Ala Gln Phe Cys Lys Asn Ala Asn Gly Ser Tyr Thr Cys Glu Glu
225                 230                 235                 240
Cys Asp Ser Ser Cys Val Gly Cys Thr Gly Glu Gly Pro Gly Asn Cys
                245                 250                 255
Lys Glu Cys Ile Ser Gly Tyr Ala Arg Glu His Gly Gln Cys Ala Asp
            260                 265                 270
Val Asp Glu Cys Ser Leu Ala Glu Lys Thr Cys Val Arg Lys Asn Glu
        275                 280                 285
Asn Cys Tyr Asn Thr Pro Gly Ser Tyr Val Cys Val Cys Pro Asp Gly
    290                 295                 300
Phe Glu Glu Xaa Gly Arg Cys Leu Cys Ala Ala Gly Arg Gly
305                 310                 315
```

<210> 4951
<211> 1835
<212> DNA
<213> Homo sapiens

<400> 4951
ngagctctgg cgctcagctg gcccccacca ctctcacctg ccgcctgggc tcgctcccgg
60
cttctctcca gccgtcgact ccacgcctcg cgcctctcgc gagaggagga ggctccacgg
120
agcgacgact tccgccctcc ttagggccgt ggtcccgtag ctaccggtcg cgtcgccgtg
180
ggcgacgtgc ccgcttccaa aatggcggcg cggcggtat ctggtgcgct tggccgggcg
240
ggctggaggc tcctgcagct gcgatgcctg cccgtggccc gttgccgaca gccctggtg
300
ccgcgtgcct tccatgcttc agctgtgggg ctaaggtctt cagatgagca gaagcagcag
360
cctcccaact cattttctca gcagcattct gagacacagg gggcagaaaa acctgatcca
420
gagtcttctc attcacccc caggtataca gaccagggcg gcgaggagga ggaggactat
480
gaaagtgagg agcagttgca gcaccgcatc ctgacggcag cccttgagtt tgtgcccgcc
540
cacgggtgga cagcagaggc gattgcagaa ggagcccagt ctctgggtct ctccagtgca
600
gcagccagca tgtttggaag gatgggcagt gagctaatac tgcattttgt gacccagtgc
660
aatacccggc tcacacgtgt gctagaagag gagcagaagc tggtacagtt gggccaggcg
720
gagaagagga agacagacca gttcctgagg gatgcagtgg aaaccagact gagaatgctg
780
atcccataca ttgagcactg gccccgggcc ctcagcatcc tcatgctccc tcacaacatc
840
ccgtccagcc tgagcctgct caccagcatg gtggatgaca tgtggcatta cgctggggac
900
cagtccactg attttaactg gtacacccgc cgagccatgc tggctgccat ctacaacaca
960
acagagctgg tgatgatgca ggactcctct ccagactttg aggacacttg gcgcttcctg
1020
```

```
gaaaaccggg ttaatgatgc aatgaacatg ggccacactg ccaagcaggt aaagtccaca
1080
ggagaggcac tggtgcaagg actcatgggt gcagcagtga cgctcaagaa cttgacaggt
1140
ctaaaccagc gtcggtgaga ggaaggggta taagctacaa tgcctagaag agaatgagcg
1200
gacagattga aagagctttg aaaagtataa ggtgccatcc acataacctg gtgttcacga
1260
gaacacacta aaggactcct gagtcactac cacagccacc tggaaaccac aaggcatttg
1320
atgctaccgt tctggtcagg gattgggctg cttcttcagt tcctaatacc agaccaagcc
1380
tcctgatgcc tttctgcact gcaactgtgt gattgaaaaa tgagatgttc atccaagcag
1440
tcaagccaca gaaacccagc atgtccctgt cacaatctca tgggcacctt gatcatgtct
1500
taaccttccc ttaaccttgg ggctcccaag ccagagtcaa ggtctgacgc cacctcaagg
1560
tgacagctca tctccagcac agcacaggcg tgtgcacaca gaggtgttcc ttgcagcccc
1620
ctccctctca ggtgtcctga gatgctgctc ctgggagccc cctcagaaaa ctgcctcacc
1680
tgagacaagt gcctgctgga cagaggtgtg attccaggcc tggtgtcaca tgacaccagc
1740
atgcattgca ggattattag tgtattttga gtctgtaaaa ataataaata tgtttgaagt
1800
agttaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaa
1835
```

```
<210> 4952
<211> 318
<212> PRT
<213> Homo sapiens
```

```
<400> 4952
Met Ala Ala Ala Ala Val Ser Gly Ala Leu Gly Arg Ala Gly Trp Arg
1               5                  10                  15
Leu Leu Gln Leu Arg Cys Leu Pro Val Ala Arg Cys Arg Gln Ala Leu
            20                  25                  30
Val Pro Arg Ala Phe His Ala Ser Ala Val Gly Leu Arg Ser Ser Asp
            35                  40                  45
Glu Gln Lys Gln Gln Pro Pro Asn Ser Phe Ser Gln Gln His Ser Glu
        50                  55                  60
Thr Gln Gly Ala Glu Lys Pro Asp Pro Glu Ser Ser His Ser Pro Pro
65                  70                  75                  80
Arg Tyr Thr Asp Gln Gly Gly Glu Glu Glu Glu Asp Tyr Glu Ser Glu
                85                  90                  95
Glu Gln Leu Gln His Arg Ile Leu Thr Ala Ala Leu Glu Phe Val Pro
            100                 105                 110
Ala His Gly Trp Thr Ala Glu Ala Ile Ala Glu Gly Ala Gln Ser Leu
        115                 120                 125
Gly Leu Ser Ser Ala Ala Ala Ser Met Phe Gly Arg Met Gly Ser Glu
        130                 135                 140
Leu Ile Leu His Phe Val Thr Gln Cys Asn Thr Arg Leu Thr Arg Val
```

```
145                   150                   155                   160
Leu Glu Glu Glu Gln Lys Leu Val Gln Leu Gly Gln Ala Glu Lys Arg
                  165                   170                   175
Lys Thr Asp Gln Phe Leu Arg Asp Ala Val Glu Thr Arg Leu Arg Met
                  180                   185                   190
Leu Ile Pro Tyr Ile Glu His Trp Pro Arg Ala Leu Ser Ile Leu Met
                  195                   200                   205
Leu Pro His Asn Ile Pro Ser Ser Leu Ser Leu Leu Thr Ser Met Val
        210                   215                   220
Asp Asp Met Trp His Tyr Ala Gly Asp Gln Ser Thr Asp Phe Asn Trp
225                   230                   235                   240
Tyr Thr Arg Arg Ala Met Leu Ala Ala Ile Tyr Asn Thr Thr Glu Leu
                  245                   250                   255
Val Met Met Gln Asp Ser Ser Pro Asp Phe Glu Asp Thr Trp Arg Phe
        260                   265                   270
Leu Glu Asn Arg Val Asn Asp Ala Met Asn Met Gly His Thr Ala Lys
        275                   280                   285
Gln Val Lys Ser Thr Gly Glu Ala Leu Val Gln Gly Leu Met Gly Ala
        290                   295                   300
Ala Val Thr Leu Lys Asn Leu Thr Gly Leu Asn Gln Arg Arg
305                   310                   315
```

```
<210> 4953
<211> 355
<212> DNA
<213> Homo sapiens
```

```
<400> 4953
gtgcacgcag gaaatggcgg gtgggaggca ggacaggaga gcccaggcct ggacaccact
60
gtcagcctgg ggatgcttgg cggcttctcc agtcctggga gcaggcatca cctggccgcg
120
ggtgccccct ggtggcagct tgaaggaagg acgggcagtg ggtcgcagcc agcggggacc
180
taccccgcaa aacgcacata aaagctggaa tcagcttgtt acagctgcag gtccctctcg
240
tccgatttgg atagaccctc ttgggaccca ctgcaccagg aaccccaaa tgcagctcag
300
cagcatggga ggagccctgt ctgctggggg tgtctgggat cgtcggagag aggct
355
```

```
<210> 4954
<211> 114
<212> PRT
<213> Homo sapiens
```

```
<400> 4954
Met Ala Gly Gly Arg Gln Asp Arg Arg Ala Gln Ala Trp Thr Pro Leu
1               5                   10                  15
Ser Ala Trp Gly Cys Leu Ala Ala Ser Pro Val Leu Gly Ala Gly Ile
              20                  25                  30
Thr Trp Pro Arg Val Pro Pro Gly Gly Ser Leu Lys Glu Gly Arg Ala
            35                  40                  45
Val Gly Arg Ser Gln Arg Gly Pro Thr Pro Gln Asn Ala His Lys Ser
```

```
         50                        55                        60
Trp Asn Gln Leu Val Thr Ala Ala Gly Pro Ser Arg Pro Ile Trp Ile
65                        70                        75                        80
Asp Pro Leu Gly Thr His Cys Thr Arg Glu Pro Gln Met Gln Leu Ser
                    85                        90                        95
Ser Met Gly Gly Ala Leu Ser Ala Gly Gly Val Trp Asp Arg Arg Arg
                   100                       105                       110
Glu Ala
```

```
<210> 4955
<211> 364
<212> DNA
<213> Homo sapiens
```

```
<400> 4955
agatctaagg ccctcgggag agatgggaac tgagcacctg ggtcttagac cggaggagca
60
aactgcaaga cagggtggcc ggggacacca gcctccgccc ttctgtgaca taaggacaag
120
agctcagcct gcccaggaac aactctgggc aagagatgtg gaaagaaaga gctcangggg
180
gggcacgcat ggcatcctgg ggggacatct gagggcaccc ccacccacta ttcctccctc
240
caaggtggcc tctgagtgtg aaggcagggg gaagcagaca cctgcccctc actctccctc
300
cctaccacat agctaccggg tggggggcgt ccctgggatg attcctgagg gcaggatcca
360
gggg
364
```

```
<210> 4956
<211> 114
<212> PRT
<213> Homo sapiens
```

```
<400> 4956
Met Gly Thr Glu His Leu Gly Leu Arg Pro Glu Glu Gln Thr Ala Arg
 1               5                        10                        15
Gln Gly Gly Arg Gly His Gln Pro Pro Pro Phe Cys Asp Ile Arg Thr
                    20                        25                        30
Arg Ala Gln Pro Ala Gln Glu Gln Leu Trp Ala Arg Asp Val Glu Arg
                   35                        40                        45
Lys Ser Ser Xaa Gly Gly Thr His Gly Ile Leu Gly Gly His Leu Arg
                   50                        55                        60
Ala Pro Pro Pro Thr Ile Pro Pro Ser Lys Val Ala Ser Glu Cys Glu
65                        70                        75                        80
Gly Arg Gly Lys Gln Thr Pro Ala Pro His Ser Pro Ser Leu Pro His
                    85                        90                        95
Ser Tyr Arg Val Gly Gly Val Pro Gly Met Ile Pro Glu Gly Arg Ile
                   100                       105                       110
Gln Gly
```

<210> 4957
<211> 872
<212> DNA
<213> Homo sapiens

<400> 4957
nttcatattt tttttttttt ttggacacaa catgatatta ggctttattt gaatttaaaa
60
tcttgattcc atccagggac attttttacc gaagcgtctc agagactggc tcagggtatt
120
tcttgacaag actgtacagg gcttctcatc atacacaaac cctccacagc ccacggctcc
180
aacccacagc acctcctgca gtcctggagg gaaaagggac agtaacatga agtgtctgaa
240
gatccatttc acctcttttc catgtgaatc atgacgcttt caatgcattt cttgacagga
300
ttctattttg aaagaatgat gctcaatctg tacctttat gcttcttgtt tcttctccat
360
caataatatg tcagtcaact gcttgtcaga gacacttagc tgctgacagg tcctcataac
420
ctgactcagg taaactgcca agagatgctt gcacaggatg ctgtcactct tccgtagcac
480
tgagaatgca aatgcaggac atgaacagta atgacaagaa gccaaacatg tgtatgtttt
540
actggaactt ccaaggacct ggtaaacacg ccttccactg ggtgatgaga ttaaggtgat
600
ggactgtcga tcaactaggt ccaaggcctg ggtggctgat gagccaaaga gaaacttcag
660
cgataacaga tattcatcag gaattcggtc ccgtacttcg cgcgctctcc tgcaccgccg
720
ccgccatctc gctcaggagc tcctccacaa ccgccggcaa ctacggccat cgcgccgcag
780
gacacgccct ccacgacgcg gaccgcgcga cgctccagct gactgcgcct acctgtggag
840
gatcctgacc ccccgccggc ctcgttccga at
872

<210> 4958
<211> 51
<212> PRT
<213> Homo sapiens

<400> 4958
Gln Ile Phe Ile Arg Asn Ser Val Pro Tyr Phe Ala Arg Ser Pro Ala
1   5   10   15
Pro Pro Pro Pro Ser Arg Ser Gly Ala Pro Pro Gln Pro Pro Ala Thr
            20   25   30
Thr Ala Ile Ala Pro Gln Asp Thr Pro Ser Thr Thr Arg Thr Ala Arg
        35   40   45
Arg Ser Ser
    50

<210> 4959
<211> 449

<212> DNA
<213> Homo sapiens

<400> 4959
acgcgtgtca aggctgggaa tgcaaatggt agtggtggtt tcctttgctg ggggttgatg
60
cagtggttgg ggggcttcc atttgcagtt gagggccagg tgtttgggtc cttccatgtg
120
gcagggataa agaggagagc tggcatctgg agtcatgatc tgtctgagag gcagtgcctc
180
cggccaccgt aggatggagg ccagcttcca gccctggctg atggggggaga agcagcgaat
240
tctccagatg tggtatggca gacctttgga agattcactc ggcctccact taaccttgtg
300
agaccaaagg ccacagcccc atgtgttctg cgtgctgttg aacatgtttg tatttcattg
360
gcgtggatga taatttggtt gaaaggagag atggtcacca gtggactcag tttaggaagg
420
cacaaaggtc aacccttcc gtttctaga
449

<210> 4960
<211> 115
<212> PRT
<213> Homo sapiens

<400> 4960
Met Phe Asn Ser Thr Gln Asn Thr Trp Gly Cys Gly Leu Trp Ser His
1   5   10   15
Lys Val Lys Trp Arg Pro Ser Glu Ser Ser Lys Gly Leu Pro Tyr His
            20   25   30
Ile Trp Arg Ile Arg Cys Phe Ser Pro Ile Ser Gln Gly Trp Lys Leu
        35   40   45
Ala Ser Ile Leu Arg Trp Pro Glu Ala Leu Pro Leu Arg Gln Ile Met
    50   55   60
Thr Pro Asp Ala Ser Ser Pro Leu Tyr Pro Cys His Met Glu Gly Pro
65   70   75   80
Lys His Leu Ala Leu Asn Cys Lys Trp Lys Pro Pro Gln Pro Leu His
            85   90   95
Gln Pro Pro Ala Lys Glu Thr Thr Thr Thr Ile Cys Ile Pro Ser Leu
            100   105   110
Asp Thr Arg
        115

<210> 4961
<211> 4737
<212> DNA
<213> Homo sapiens

<400> 4961
gcggccgcca cacccagcac cacaggcacc aagtccaaca cgcccacatc ctccgtgccc
60
tcggccgccg tcacacccct caacgagagc ctgcagcccc tgggggacta tggcgtgggc
120

```
tccaagaaca gcaagcgtgc ccgggagaag cgcgacagcc gcaacatgga agtacaggtc
180
acccaggaga tgcgcaacgt cagtataggc atgggcagca gtgacgagtg gtctgatgtt
240
caagacatta ttgactccac gccagagctg gacatgtgtc cagagacccg cctggaccgc
300
acaggaagca gcccaaccca gggcatcgtg aacaaagctt tcggcatcaa caccgactcc
360
ctgtaccatg agctgtcgac ggcagggtct gaggtcatcg gggatgtgga cgaaggggcc
420
gacctcctag gggagttctc aggaatgggc aaagaagtgg ggaatctgct actggaaaac
480
tcacagcttc tggaaaccaa aaacgccttg aatgtggtga agaatgacct gattgccaag
540
gtcgaccagc tgtccgggga gcaggaggtg ctgaggggcg agttggaggc tgctaagcag
600
gccaaagtca agctggaaaa ccgtatcaag gagctggaag aggaactgaa aagagtgaag
660
tccgaggcca tcatcgcccg ccgtgaaccc aaagaagagg cggaggatgt aagcagctat
720
ctctgtacag aatcggacaa aatccccatg gcccagcgcc gccgcttcac gcgggtggag
780
atggcccgtg tgctcatgga gcggaaccag tacaaggagc ggctgatgga gctgcaggag
840
gctgtgcggt ggactgagat gatcagagcg tcccgagagc acccatccgt ccaggagaag
900
aagaagtcga ccatctggca gttcttcagc cgcctcttca gctcttcctc cagcccccct
960
ccggccaagc gcccctatcc ctcggtgaac atccactaca agtcacccac cactgccggc
1020
ttcagccagc gccgcaacca tgccatgtgc ccgatctcgg caggcagccg gcccctggaa
1080
ttcttccctg acgacgactg cacgtcctcc gcccgtcgag agcagaagcg cgagcagtac
1140
cgccaggtgc gtgagcacgt gcgtaacgac gacggccgtc tgcaggcctg cggctggagc
1200
ctgcccgcca agtacaagca gctgagtccc aacggggggcc aggaggacac gcggatgaag
1260
aacgtgccgg tgccggtgta ctgccgccct ctggtggaga aggaccccac catgaagctg
1320
tggtgtgccg cgggcgtcaa cctgagcggg tggaggccca atgaggacga cgctgggaat
1380
ggagtcaagc cagcgccagg ccgcgatccc ctgacctgcg accgcgaagg agacggcgag
1440
cccaagagcg cccacgcgtc tcccgagaag aagaaggcca aggagctccc tgaaatggac
1500
gccacctcca gccgggtgtg gatcctgacc agcaccctga ccaccagcaa ggtggtgatc
1560
atcgacgcca accagccggg cacggtggtg gaccagttca ccgtctgcaa cgcgcacgtg
1620
ctgtgcatct ccagcatccc cgcggccagc gacagcgact accctcccgg ggagatgttc
1680
ctggacagcg acgtgaaccc agaggacccg ggcgcagatg cgtgctggc cggtatcacc
1740
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ctggtgggct gtgccacccg ctgcaacgtg ccgcggagca actgctcctc ccgaggggac
1800
accccagtgc tagacaaggg gcagggggag gtggccacca tcgccaacgg gaaggtcaac
1860
ccgtcccagt ccacagagga ggccacagag gccacggagg tgccagaccc tgggcccagc
1920
gagccagaga cagccacatt gcggcccggg cctctcacag agcacgtctt cactgaccca
1980
gccccgaccc cgtcctctgg cccccagcct ggcagcgaga cgggccaga gcctgacagc
2040
agcagcacac ggccagagcc agagcccagc ggggacccca cgggagcagg cagcagtgct
2100
gcacccacca tgtggctggg agcccagaac ggctggctct atgtgcactc ggctgtggcc
2160
aactggaaga agtgcctgca ctccatcaag ctgaaggatt ctgtgctgag cctggtgcat
2220
gtcaaaggcc gtgtgctggt ggctctggcg gacgggaccc tggccatctt ccaccgtggt
2280
gaagatggcc agtgggatct gagcaactat cacctaatgg acctgggcca cccgcaccac
2340
tccatccgct gcatggctgt tgtgtacgac cgcgtgtggt gtggctacaa gaacaaggtg
2400
cacgtcatcc agcccaagac catgcagata gagaagtcat ttgacgccca cccgcggcgg
2460
gagagccagg tgcggcagct ggcgtggatc ggcgatggcg tatgggtgtc catccgcctg
2520
gactccaccc tgaggctcta ccatgcacac acgcaccagc atctacagga cgtggacatt
2580
gagccctacg tcagcaagat gctaggcact ggcaagctgg gtttctcctt cgtacgcatc
2640
acggccctgc ttgtcgcggg cagccggctc tgggtgggca ccggcaacgg agtggtcatc
2700
tccatccccc tgacagagac tgtggtcctg caccgaggcc agctcctggg gctccgagcc
2760
aataagacat cccccacctc tggggagggc gcccgtcccg ggggcatcat ccacgtgtat
2820
ggcgatgaca gcagtgacag ggcggccagc agcttcatcc cctactgctc catggcccag
2880
gcccagctat gcttccatgg gcaccgcgat gccgtgaagt tctttgtctc ggtgccaggg
2940
aacgtgctgg ccaccctgaa tggcagtgtg ctggacagcc cagccgaggg ccctgggcca
3000
gctgcccctg cctcggaggt cgagggccag aagctgcgga acgtgctggt gctgagcggc
3060
ggggagggct acatcgactt ccgcattgga gacggagagg acgacgagac ggaggagggc
3120
gcagggggaca tgagccaggt gaagcccgtg ctgtccaagg cagagcgcag tcacatcatc
3180
gtgtggcagg tgtcctacac ccccgagtga agctgctgcc ctgcctggcc cgacctgtac
3240
ataggacccc cgaccacctg accccgcccc ggcccgcggg gtagccagcc aggcgccgcc
3300
gcccctcttc taacctctca acctgcagct ttcacctgag tctggccct ccagcgggca
3360
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gggagtgcgg ggatgcggat cagctgggag gaggagggga ggggtgcttc cacccgaggg
3420

gaagatgctc tcgggacagt ttcccgggca gctcctggcc agcttccagc ccagagtcct
3480

caagtccagg gcaccttggg cccagcgcag gcagaatccg aggtggtcct ggctctaccc
3540

tgggcctcct actccccagc acccctggag gaggcagggg ctccccgccg ccgaggctgc
3600

ctgccctggg cccacctccg catgctgctc atggggccac cctgcctcct gggccctcac
3660

tctgcctagg ggagctgggc caggcactag cctttgccca gggaggtggg cctcaggctg
3720

cccaggtgcc tgcaccccag ccggccttct ctggggcctc cccgtcgtca agcctctatc
3780

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3840

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3900

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4140

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4200

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4440

gaagcacaga tcttggggag ctgccccaca agccccgctg gccaccgagg gctgcagccg
4500

ctgcgctgcc ggcttctccc caccaccctg ccacctccac tgtgatgtat gtccgctccc
4560

tcgtctgttc ccccaggatc tcgaagtgac tccgggctga gcagtggggc ggctggggga
4620

ggggtgacga ttctcctcag gctttggccc tgcaagcaaa cccacatatc tgctctgtat
4680

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4737

<210> 4962
<211> 1069
<212> PRT
<213> Homo sapiens

<400> 4962
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               20                      25                     30
Pro Leu Gly Asp Tyr Gly Val Gly Ser Lys Asn Ser Lys Arg Ala Arg
           35                      40                     45
Glu Lys Arg Asp Ser Arg Asn Met Glu Val Gln Val Thr Gln Glu Met
       50                      55                     60
Arg Asn Val Ser Ile Gly Met Gly Ser Ser Asp Glu Trp Ser Asp Val
65                      70                     75                     80
Gln Asp Ile Ile Asp Ser Thr Pro Glu Leu Asp Met Cys Pro Glu Thr
               85                      90                     95
Arg Leu Asp Arg Thr Gly Ser Ser Pro Thr Gln Gly Ile Val Asn Lys
           100                     105                    110
Ala Phe Gly Ile Asn Thr Asp Ser Leu Tyr His Glu Leu Ser Thr Ala
       115                     120                    125
Gly Ser Glu Val Ile Gly Asp Val Asp Glu Gly Ala Asp Leu Leu Gly
   130                     135                    140
Glu Phe Ser Gly Met Gly Lys Glu Val Gly Asn Leu Leu Leu Glu Asn
145                     150                    155                    160
Ser Gln Leu Leu Glu Thr Lys Asn Ala Leu Asn Val Val Lys Asn Asp
               165                     170                    175
Leu Ile Ala Lys Val Asp Gln Leu Ser Gly Glu Gln Glu Val Leu Arg
           180                     185                    190
Gly Glu Leu Glu Ala Ala Lys Gln Ala Lys Val Lys Leu Glu Asn Arg
       195                     200                    205
Ile Lys Glu Leu Glu Glu Glu Leu Lys Arg Val Lys Ser Glu Ala Ile
   210                     215                    220
Ile Ala Arg Arg Glu Pro Lys Glu Glu Ala Glu Asp Val Ser Ser Tyr
225                     230                     235                    240
Leu Cys Thr Glu Ser Asp Lys Ile Pro Met Ala Gln Arg Arg Arg Phe
               245                     250                    255
Thr Arg Val Glu Met Ala Arg Val Leu Met Glu Arg Asn Gln Tyr Lys
           260                     265                    270
Glu Arg Leu Met Glu Leu Gln Glu Ala Val Arg Trp Thr Glu Met Ile
       275                     280                    285
Arg Ala Ser Arg Glu His Pro Ser Val Gln Glu Lys Lys Lys Ser Thr
   290                     295                    300
Ile Trp Gln Phe Phe Ser Arg Leu Phe Ser Ser Ser Ser Pro Pro
305                     310                     315                    320
Pro Ala Lys Arg Pro Tyr Pro Ser Val Asn Ile His Tyr Lys Ser Pro
           325                     330                    335
Thr Thr Ala Gly Phe Ser Gln Arg Arg Asn His Ala Met Cys Pro Ile
           340                     345                    350
Ser Ala Gly Ser Arg Pro Leu Glu Phe Phe Pro Asp Asp Asp Cys Thr
       355                     360                    365
Ser Ser Ala Arg Arg Glu Gln Lys Arg Glu Gln Tyr Arg Gln Val Arg
   370                     375                    380
Glu His Val Arg Asn Asp Asp Gly Arg Leu Gln Ala Cys Gly Trp Ser
385                     390                     395                    400
Leu Pro Ala Lys Tyr Lys Gln Leu Ser Pro Asn Gly Gly Gln Glu Asp
           405                     410                    415
Thr Arg Met Lys Asn Val Pro Val Pro Val Tyr Cys Arg Pro Leu Val
       420                     425                    430
Glu Lys Asp Pro Thr Met Lys Leu Trp Cys Ala Ala Gly Val Asn Leu
```

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                435                    440                    445
      Ser Gly Trp Arg Pro Asn Glu Asp Asp Ala Gly Asn Gly Val Lys Pro
          450                    455                    460
      Ala Pro Gly Arg Asp Pro Leu Thr Cys Asp Arg Glu Gly Asp Gly Glu
      465                    470                    475                    480
      Pro Lys Ser Ala His Ala Ser Pro Glu Lys Lys Lys Ala Lys Glu Leu
                          485                    490                    495
      Pro Glu Met Asp Ala Thr Ser Ser Arg Val Trp Ile Leu Thr Ser Thr
                    500                    505                    510
      Leu Thr Thr Ser Lys Val Val Ile Ile Asp Ala Asn Gln Pro Gly Thr
                    515                    520                    525
      Val Val Asp Gln Phe Thr Val Cys Asn Ala His Val Leu Cys Ile Ser
                    530                    535                    540
      Ser Ile Pro Ala Ala Ser Asp Ser Asp Tyr Pro Pro Gly Glu Met Phe
      545                    550                    555                    560
      Leu Asp Ser Asp Val Asn Pro Glu Asp Pro Gly Ala Asp Gly Val Leu
                    565                    570                    575
      Ala Gly Ile Thr Leu Val Gly Cys Ala Thr Arg Cys Asn Val Pro Arg
                    580                    585                    590
      Ser Asn Cys Ser Ser Arg Gly Asp Thr Pro Val Leu Asp Lys Gly Gln
                    595                    600                    605
      Gly Glu Val Ala Thr Ile Ala Asn Gly Lys Val Asn Pro Ser Gln Ser
          610                    615                    620
      Thr Glu Glu Ala Thr Glu Ala Thr Glu Val Pro Asp Pro Gly Pro Ser
      625                    630                    635                    640
      Glu Pro Glu Thr Ala Thr Leu Arg Pro Gly Pro Leu Thr Glu His Val
                    645                    650                    655
      Phe Thr Asp Pro Ala Pro Thr Pro Ser Ser Gly Pro Gln Pro Gly Ser
                    660                    665                    670
      Glu Asn Gly Pro Glu Pro Asp Ser Ser Ser Thr Arg Pro Glu Pro Glu
                    675                    680                    685
      Pro Ser Gly Asp Pro Thr Gly Ala Gly Ser Ser Ala Ala Pro Thr Met
          690                    695                    700
      Trp Leu Gly Ala Gln Asn Gly Trp Leu Tyr Val His Ser Ala Val Ala
      705                    710                    715                    720
      Asn Trp Lys Lys Cys Leu His Ser Ile Lys Leu Lys Asp Ser Val Leu
                    725                    730                    735
      Ser Leu Val His Val Lys Gly Arg Val Leu Val Ala Leu Ala Asp Gly
                    740                    745                    750
      Thr Leu Ala Ile Phe His Arg Gly Glu Asp Gly Gln Trp Asp Leu Ser
          755                    760                    765
      Asn Tyr His Leu Met Asp Leu Gly His Pro His His Ser Ile Arg Cys
          770                    775                    780
      Met Ala Val Val Tyr Asp Arg Val Trp Cys Gly Tyr Lys Asn Lys Val
      785                    790                    795                    800
      His Val Ile Gln Pro Lys Thr Met Gln Ile Glu Lys Ser Phe Asp Ala
                    805                    810                    815
      His Pro Arg Arg Glu Ser Gln Val Arg Gln Leu Ala Trp Ile Gly Asp
                    820                    825                    830
      Gly Val Trp Val Ser Ile Arg Leu Asp Ser Thr Leu Arg Leu Tyr His
          835                    840                    845
      Ala His Thr His Gln His Leu Gln Asp Val Asp Ile Glu Pro Tyr Val
          850                    855                    860
      Ser Lys Met Leu Gly Thr Gly Lys Leu Gly Phe Ser Phe Val Arg Ile
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865                   870                   875                   880
Thr Ala Leu Leu Val Ala Gly Ser Arg Leu Trp Val Gly Thr Gly Asn
                          885                   890                   895
Gly Val Val Ile Ser Ile Pro Leu Thr Glu Thr Val Val Leu His Arg
                  900                   905                   910
Gly Gln Leu Leu Gly Leu Arg Ala Asn Lys Thr Ser Pro Thr Ser Gly
          915                   920                   925
Glu Gly Ala Arg Pro Gly Gly Ile Ile His Val Tyr Gly Asp Asp Ser
      930                   935                   940
Ser Asp Arg Ala Ala Ser Ser Phe Ile Pro Tyr Cys Ser Met Ala Gln
945                   950                   955                   960
Ala Gln Leu Cys Phe His Gly His Arg Asp Ala Val Lys Phe Phe Val
              965                   970                   975
Ser Val Pro Gly Asn Val Leu Ala Thr Leu Asn Gly Ser Val Leu Asp
          980                   985                   990
Ser Pro Ala Glu Gly Pro Gly Pro Ala Ala Pro Ala Ser Glu Val Glu
          995                   1000                  1005
Gly Gln Lys Leu Arg Asn Val Leu Val Leu Ser Gly Gly Glu Gly Tyr
      1010                  1015                  1020
Ile Asp Phe Arg Ile Gly Asp Gly Glu Asp Asp Glu Thr Glu Glu Gly
1025                  1030                  1035                  1040
Ala Gly Asp Met Ser Gln Val Lys Pro Val Leu Ser Lys Ala Glu Arg
              1045                  1050                  1055
Ser His Ile Ile Val Trp Gln Val Ser Tyr Thr Pro Glu
          1060                  1065
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<210> 4963
<211> 1575
<212> DNA
<213> Homo sapiens

<400> 4963

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120
aagtgccacc cggtccactt cctgaactca cgggccctgg gcgtcatgga caagagcact
180
gccatcccca agccagctc ttctgagtct ctttcggcca aaacctgcag cttatttctg
240
cccaattacg ttcaggacaa gtatctgtta cagcttctaa gaaacgcaga tgacgtcagc
300
acctgggtgg ctgcagagat tgtgaccagc cacacctcca agctgcaggt gaacttgctg
360
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420
cagatcctga gcgggctgga gcacctggcc gtgaggcagt cccctgcctg gagaattctg
480
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540
gacagcctgt gtctgatgga agggcggcgc ttccgggcgc agcccaccct gccctcggcc
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cacctcctgg ccatgcacat ccagcagctg gagacaggcg gcttcaccat gaccaacggg
660
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gcccacaggt ggagcaagct caggaacatc gcaaaggtgg tgagccaggt gcacgcgttc
720
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780
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840
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960
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1020
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1080
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1260
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1380
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1440
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1575

<210> 4964
<211> 304
<212> PRT
<213> Homo sapiens

<400> 4964
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Tyr Phe Leu Thr Glu Tyr Ser Thr His Gln Leu Phe Ser Gln Leu Thr
            20   25   30
Leu Leu Gln Gln Glu Leu Phe Gln Lys Cys His Pro Val His Phe Leu
        35   40   45
Asn Ser Arg Ala Leu Gly Val Met Asp Lys Ser Thr Ala Ile Pro Lys
    50   55   60
Ala Ser Ser Ser Glu Ser Leu Ser Ala Lys Thr Cys Ser Leu Phe Leu
65   70   75   80
Pro Asn Tyr Val Gln Asp Lys Tyr Leu Leu Gln Leu Leu Arg Asn Ala
            85   90   95
Asp Asp Val Ser Thr Trp Val Ala Ala Glu Ile Val Thr Ser His Thr
            100   105   110
Ser Lys Leu Gln Val Asn Leu Leu Ser Lys Phe Xaa Leu Ile Ala Lys

4133

```
                115                   120                   125
Ser Cys Tyr Glu Gln Arg Asn Phe Ala Thr Ala Met Gln Ile Leu Ser
    130                   135                   140
Gly Leu Glu His Leu Ala Val Arg Gln Ser Pro Ala Trp Arg Ile Leu
145                   150                   155                   160
Pro Ala Lys Ile Ala Glu Val Met Glu Glu Leu Lys Ala Val Glu Val
                165                   170                   175
Phe Leu Lys Ser Asp Ser Leu Cys Leu Met Glu Gly Arg Arg Phe Arg
                180                   185                   190
Ala Gln Pro Thr Leu Pro Ser Ala His Leu Leu Ala Met His Ile Gln
            195                   200                   205
Gln Leu Glu Thr Gly Gly Phe Thr Met Thr Asn Gly Ala His Arg Trp
    210                   215                   220
Ser Lys Leu Arg Asn Ile Ala Lys Val Val Ser Gln Val His Ala Phe
225                   230                   235                   240
Gln Glu Asn Pro Tyr Thr Phe Ser Pro Asp Pro Lys Leu Gln Ser Tyr
                245                   250                   255
Leu Lys Gln Arg Ile Ala Arg Phe Ser Gly Ala Asp Ile Ser Thr Leu
                260                   265                   270
Ala Ala Asp Ser Arg Ala Asn Phe His Gln Val Ser Ser Glu Lys His
            275                   280              ·       285
Ser Arg Lys Ile Gln Asp Lys Leu Arg Arg Met Lys Ala Thr Phe Gln
    290                   295                   300
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<210> 4965
<211> 1474
<212> DNA
<213> Homo sapiens

<400> 4965
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240
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360
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480
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540
gaggggcaga gaaggctgag cggcaccacg tggggctggc cgcgggttgt gggcatgagc
600
acgcctggag aggccatggg gctggtgaca agctctggcc agaagacccc aagaaggtct
660
gatcctgggg tctgatccag gcctgcggca ctgggtccta ggcagactgt ctgcctggtg
720
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840
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1380
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1474

<210> 4966
<211> 212
<212> PRT
<213> Homo sapiens

<400> 4966
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            20   25   30
Leu Ile Leu Lys Trp Glu Thr Leu Asn Asp Ala Gly Phe Thr Thr Ala
        35   40   45
Asn Asn Ile Ala Asn Leu Lys Ile Ser Leu Leu Asn Lys Asp Lys Ile
    50   55   60
Glu Leu Asp Ser Ser Ser Pro Ala Ser Lys Glu Asn Glu Glu Lys Val
65   70   75   80
Cys Leu Glu Tyr Asn Glu Glu Leu Glu Lys Leu Cys Glu Glu Leu Gln
                85   90   95
Ala Thr Leu Asp Gly Leu Thr Lys Ile Gln Val Lys Met Glu Lys Leu
            100   105   110
Ser Ser Thr Thr Lys Gly Ile Cys Glu Leu Glu Asn Tyr His Tyr Gly
            115   120   125
Glu Glu Ser Lys Arg Pro Pro Leu Phe His Thr Trp Pro Thr Thr His
        130   135   140
Phe Tyr Glu Val Ser His Lys Leu Leu Glu Met Tyr Arg Lys Glu Leu
145   150   155   160
Leu Leu Lys Arg Thr Val Ala Lys Glu Leu Ala His Thr Gly Asp Pro

```
                    165                 170                 175
Asp Leu Thr Leu Ser Tyr Leu Ser Met Trp Leu His Gln Pro Tyr Val
            180                 185                 190
Glu Ser Asp Ser Arg Leu His Leu Glu Ser Met Leu Leu Glu Thr Gly
        195                 200                 205
His Arg Ala Leu
    210


<210> 4967
<211> 550
<212> DNA
<213> Homo sapiens

<400> 4967
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120
cgccttgacc tccaaaatag ctggngttac acgcgtgagc ccccatgccc agcttcccag
180
taagacattt attctgagga gttggctcac atgagtaagg aggctgagaa gttccacaat
240
ctgaacattc aggagaaagc tggtgatgta atttggtctg agtcccaatg cctgagaacc
300
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360
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420
tcaggctctc agaggcttgg atgatgtcca ttcacattgg gcagggctag gtactttct
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tgtttaatct
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<210> 4968
<211> 51
<212> PRT
<213> Homo sapiens

<400> 4968
Glu Thr Gly Ser His Ser Val Ile Gln Ala Gly Met Leu Trp His Asn
1               5                   10                  15
Tyr Ser Ser Leu Gln Pro Arg Thr Pro Gly Leu Lys Gln Ser Phe Arg
            20                  25                  30
Leu Asp Leu Gln Asn Ser Trp Xaa Tyr Thr Arg Glu Pro Pro Cys Pro
        35                  40                  45
Ala Ser Gln
    50


<210> 4969
<211> 2911
<212> DNA
<213> Homo sapiens
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<400> 4969
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120
gatgagaagg gtgcgggggc ccttcccttc ctaccagggg tctttggcta cgcagtgaat
180
cctcaagcag cacccctgc cccaccaaca ccacctcccc caactcttcc tccaccaatt
240
cccctaagg gagaagggga aagggcaggg gttgagagaa cccagaaggg cgatgtgggg
300
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360
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420
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480
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540
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600
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660
taaacctagg ggaaaccatc tctctcacct aatgacccgc cttgttctga agctttctct
720
aagcccttcc cagttgcttc ctagcacatt ccattctttg tggcccaggg ctggaccaga
780
ccattgtgat acctgacccc gcccacctgg gagtgtggct ttgggtttca tccttcccca
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1020
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1140
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1560

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1920
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1980
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2040
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2100
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2280
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2520
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2880
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2911
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<210> 4970
<211> 155
<212> PRT
<213> Homo sapiens

<400> 4970
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Ser Ser Leu Pro Pro Thr Leu Thr Thr Ser Val Thr Trp Pro Leu Pro
            20                  25                  30
Val Ala Leu Asn Met Val Leu Pro Asp Glu Lys Gly Ala Gly Ala Leu
            35                  40                  45
Pro Phe Leu Pro Gly Val Phe Gly Tyr Ala Val Asn Pro Gln Ala Ala
    50                  55                  60
Pro Pro Ala Pro Pro Thr Pro Pro Pro Pro Thr Leu Pro Pro Pro Ile
65                  70                  75                  80
Pro Pro Lys Gly Glu Gly Glu Arg Ala Gly Val Glu Arg Thr Gln Lys
            85                  90                  95
Gly Asp Val Gly Xaa Asn Pro Gly Ala Gln Ser Pro Phe His Gln Met
            100                 105                 110
Pro Pro Ser Leu Asn Pro Pro Pro Leu Pro Ala Pro Trp Pro Pro Cys
    115                 120                 125
Pro Leu Gly Ala Pro Ser His Ser Cys Ala Gly Thr Trp Gly Pro Leu
    130                 135                 140
Glu Leu Arg Gly Gln Ala Ala Leu Cys Glu Met
145                 150                 155
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<210> 4971
<211> 2939
<212> DNA
<213> Homo sapiens

<400> 4971
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120
gcagtcttta atctgataaa gcggttatct cgtcttgagt cccaggtgcc gagtcaatcc
180
ccatacacag ccgccgccat tgcctcgagt ccttgtgtct gactgtctgt tcctgctgct
240
gtatgacaca gcacctcgag gcaaggaaat aagaaaactg cctctgatcc aagcagagaa
300
ggtcagtgag aaggtctgcc tgtagatctg ctgtagggct tgtcaccatt ggaagcaagg
360
tcctacttca gtggcagatc tggtggcctt ggagtggctg aagaccacca ccctccacag
420
ggctgggccc atgcacagcc atccttccct accttgagtg agcttcctct gcatgttttc
480
tatatcactg gcagagcctg tagttggaaa ggggacagag tgactactgg actttgtgtg
540
aaaacaccaa ccgggacaaa acttcagtca aggctgagac gggtgggggt atataacttg
600
tccttacgtt aaacttggaa catggttgac tctgggacag aagcaagggc tagaggaaag
660
gctgaggctg gcctgcaaga tggaatcagt ggtcctgcca ctgctagagt gaatggtaaa
720
acccaggccg aggcagtggc tgaggcagaa ctgaaaacag aatcagtgac ccaggccaaa
780
gctggtgatg gagcaatgac caggacacat acagtgacct acagggaggc tatggctgtg
840
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acaagggaag tgatcaaggt ggaagataca actaagacta gagtcatggt tgagactaag
900
acaaaacccc tggcagaacg cagtatagtg ccacaaacca agtcaaaggc catgcctatg
960
tctagggtca gtactgtaac caagtctgaa gtcaaggttg ttgctgtcat tgaggcaaat
1020
attaggtcct atgccaagtc acatgataag gccaatactg ggtccagacc tgacagaagg
1080
gaagagacca gcattgggat gaaatccagt gatgaggatg aagaaaatat atgctcctgg
1140
ttctggactg gagaagagcc tagtgtaggg tcctggttct ggcctgaaga agagacctct
1200
cttcaagttt ataagcccct acctaagatc caggaaaagc ccaagcccac acacaaaccc
1260
acacttacta taaaacaaaa ggtaatagca tggtcaaggg ccaggtatat tgtcctagtt
1320
ccagttgaag gaggggagca atccttgcct ccagaaggaa actggaccct ggttgagacc
1380
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1440
tattaccaga ccttagctga gatcaaaaaa cagattaggc aaagggaaaa gtatgggcct
1500
aatccgaagg cctgccactg caaatcacgt ggctttagtt tagagcctaa agagtttgat
1560
aaacttgttg ccctccttaa gttaactaag gatcctttca ttcatgaaat agctacaatg
1620
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1680
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1740
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1860
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1920
attccagatt tcctcacctt gttaaacaag ggaagtgtca aaaccaagtt ttatgtttta
1980
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2040
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2100
attattgaaa tatttgagaa tataaatttt cagttcaaaa caaaggcaaa gctatttacc
2160
aaggaaaagt tcactaaatc tgagcttatt tcaatattcc aggaagcaaa acagtttggt
2220
cagaaactcc aagacttagc agagcacagt gatcccgaag tgagagataa agtcatacga
2280
ttaatactaa aactctgaat acccctctgt tctcataaag cctcaaacag tttttttggag
2340
ttgcaatatg aaaccaatgc atattgtaat tataaattca atacttatgt tttccatgtt
2400
gattgaggga ggcaattttta tggataccaa ttaatcttga gatcctgaac atgtgctgat
2460

```
ttttattgtg ctatatagta tataaattga gatatttttg gtatttctgc aacgtgacct
2520
gataatgaat ctattcatcc tgagtaagct atacttctgt gctttatatt gatatgtgta
2580
ttcttttgag attttatta catgttgtta ataaagttgc atgctaaaac tggtgaaaat
2640
attgtcctag ttcttcagct gaaatctagt ctggggggat aaagcacaga gagcataaag
2700
atggtgaaga acactgcctg tgtgtctgta gtggggcaca aacaaaacaa gttcacattg
2760
acagattatt tagtttcgac atacttaaaa agtagaatca ctctatgcaa gaaggcagga
2820
ctgtgctatt agttgtctgt aggctcctac tgatagggct tcaaatgagg aatgaagccc
2880
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2939
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<210> 4972
<211> 558
<212> PRT
<213> Homo sapiens

<400> 4972

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               20                  25                  30
Lys Thr Gln Ala Glu Ala Val Ala Glu Ala Glu Leu Lys Thr Glu Ser
               35                  40                  45
Val Thr Gln Ala Lys Ala Gly Asp Gly Ala Met Thr Arg Thr His Thr
         50                  55                  60
Val Thr Tyr Arg Glu Ala Met Ala Val Thr Arg Glu Val Ile Lys Val
65                  70                  75                  80
Glu Asp Thr Thr Lys Thr Arg Val Met Val Glu Thr Lys Thr Lys Pro
                   85                  90                  95
Leu Ala Glu Arg Ser Ile Val Pro Gln Thr Lys Ser Lys Ala Met Pro
               100                 105                 110
Met Ser Arg Val Ser Thr Val Thr Lys Ser Glu Val Lys Val Val Ala
         115                 120                 125
Val Ile Glu Ala Asn Ile Arg Ser Tyr Ala Lys Ser His Asp Lys Ala
         130                 135                 140
Asn Thr Gly Ser Arg Pro Asp Arg Arg Glu Glu Thr Ser Ile Gly Met
145                 150                 155                 160
Lys Ser Ser Asp Glu Asp Glu Glu Asn Ile Cys Ser Trp Phe Trp Thr
                   165                 170                 175
Gly Glu Glu Pro Ser Val Gly Ser Trp Phe Trp Pro Glu Glu Glu Thr
               180                 185                 190
Ser Leu Gln Val Tyr Lys Pro Leu Pro Lys Ile Gln Glu Lys Pro Lys
               195                 200                 205
Pro Thr His Lys Pro Thr Leu Thr Ile Lys Gln Lys Val Ile Ala Trp
               210                 215                 220
Ser Arg Ala Arg Tyr Ile Val Leu Val Pro Val Glu Gly Gly Glu Gln
225                 230                 235                 240
Ser Leu Pro Pro Glu Gly Asn Trp Thr Leu Val Glu Thr Leu Ile Glu
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4141

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                       245                   250                   255
Thr Pro Leu Gly Ile Arg Pro Leu Thr Lys Ile Pro Pro Tyr His Gly
                   260                   265                   270
Pro Tyr Tyr Gln Thr Leu Ala Glu Ile Lys Lys Gln Ile Arg Gln Arg
               275                   280                   285
Glu Lys Tyr Gly Pro Asn Pro Lys Ala Cys His Cys Lys Ser Arg Gly
           290                   295                   300
Phe Ser Leu Glu Pro Lys Glu Phe Asp Lys Leu Val Ala Leu Leu Lys
305                   310                   315                   320
Leu Thr Lys Asp Pro Phe Ile His Glu Ile Ala Thr Met Ile Met Gly
                   325                   330                   335
Ile Ser Pro Ala Tyr Pro Phe Thr Gln Asp Ile Ile His Asp Val Gly
               340                   345                   350
Ile Thr Val Met Ile Glu Asn Leu Val Asn Asn Pro Asn Val Lys Glu
           355                   360                   365
His Pro Gly Ala Leu Ser Met Val Asp Asp Ser Ser Glu Ser Ser Glu
       370                   375                   380
Glu Pro Lys Ser Gly Glu Ser Tyr Ile His Gln Val Cys Lys Gly Ile
385                   390                   395                   400
Ile Ser Cys Pro Leu Asn Ser Pro Val Gln Leu Ala Gly Leu Lys Leu
                   405                   410                   415
Leu Gly His Leu Ser Ile Lys Phe Glu Asp His Tyr Val Ile Thr Ser
               420                   425                   430
Tyr Ile Pro Asp Phe Leu Thr Leu Leu Asn Lys Gly Ser Val Lys Thr
           435                   440                   445
Lys Phe Tyr Val Leu Lys Val Phe Ser Cys Leu Ser Lys Asn His Ala
       450                   455                   460
Asn Thr Arg Glu Leu Ile Ser Ala Lys Val Leu Ser Ser Leu Val Ala
465                   470                   475                   480
Pro Phe Asn Lys Asn Glu Ser Lys Ala Asn Ile Leu Asn Ile Ile Glu
                   485                   490                   495
Ile Phe Glu Asn Ile Asn Phe Gln Phe Lys Thr Lys Ala Lys Leu Phe
               500                   505                   510
Thr Lys Glu Lys Phe Thr Lys Ser Glu Leu Ile Ser Ile Phe Gln Glu
           515                   520                   525
Ala Lys Gln Phe Gly Gln Lys Leu Gln Asp Leu Ala Glu His Ser Asp
       530                   535                   540
Pro Glu Val Arg Asp Lys Val Ile Arg Leu Ile Leu Lys Leu
545                   550                   555
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<210> 4973
<211> 3555
<212> DNA
<213> Homo sapiens

<400> 4973
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120
cgcgtctgca cctctcggcc tgccagtgta cctgccggcg cctcggtcga ccgcccccgc
180
cccctctccc gctgcgtccg cactcctgtt cctggtcctg acgcccccct cccgcccgga
240

4142

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aagctgccca gccaccagca acccccccagt gccaccatgg caactgcacc atacaactac
300
tcttacatct ttaaatatat tattattggg gacatgggag taggaaaatc ttgcttgctt
360
catcaattta cagaaaaaaa atttatggct gattgtcctc acacaattgg tgttgaattt
420
ggtacaagaa taatcgaagt tagtggccaa aaaataaaac tgcagatttg ggatacggca
480
ggacaggagc gatttagggc tgttacacgg agctactaca gaggagctgc gggagctctt
540
atggtctatg atatcactag aagaagtaca tataaccact taagcagctg gttgacagat
600
gcaaggaatc tcaccaatcc aaatactgta ataattctca taggaaataa agcagatttg
660
gaggcacaga gagatgttac atatgaagaa gccaaacagt ttgctgaaga aaatggctta
720
ttgttcctcg aagcgagtgc aaaaacggga gagaatgtag aagatgcctt ccttgaggct
780
gccaagaaaa tctatcagaa cattcaggat ggaagcttgg atctgaatgc tgctgagtct
840
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960
cctctgtctg ttggaagcag tactttttac tgcctcattg tcttctgtac atcttactgg
1020
gtttaattaa aaaaaaagaa aaaactctgt tgtaaaaaca gtttaacaca atactaaact
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gctaaacaac tagatgtaat caggttatca aaggcaagta gagtaataaa tctctcctgc
1140
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1200
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1260
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1320
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1380
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1440
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1560
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1620
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1680
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1740
cacaactgca gttcacaagt agtactggct ccacccccttg gtgctggcag tgtttgggga
1800
cattatgctg gaaagagctc ctagcatcag aggattaaca ctagcagatt ctgttccatc
1860
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tttgcactgt tgcttacctg ctgattttct taactgttct tgtgcaatcg acaatgtgct
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1980
tatagaaaaa gaaaaaaggc tgggtttact attgcacatt ttaagctttt atacctttat
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cttcttggaa tggtcagatt ctgaactgga cagtcagaac cacaggtctg ctgttaaggg
2100
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2160
agtgtgaggg gctgttttat gtcatgttgg cataaattgt tttgtaaaag ggaaagtgtt
2220
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2280
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2460
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3120
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3180
acccacagct ttattcttgt gtttacatta cccttgaaat gttttcagtc aacccttttc
3240
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3300
gattctatca tatgcatgtg taatcccctg taatacactc aggtgctcac aaatagagca
3360
gattgtcata ttgtaacatg cgtgtgccag acaccgggca gtacactttg gaaagaatgt
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gaaatccttt taatttttaa tccatagctt actgcttgtg cagtcacctg cctctcgagg
3480
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3555

<210> 4974
<211> 215
<212> PRT
<213> Homo sapiens

<400> 4974
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Ile Gly Asp Met Gly Val Gly Lys Ser Cys Leu Leu His Gln Phe Thr
                20   25   30
Glu Lys Lys Phe Met Ala Asp Cys Pro His Thr Ile Gly Val Glu Phe
            35   40   45
Gly Thr Arg Ile Ile Glu Val Ser Gly Gln Lys Ile Lys Leu Gln Ile
        50   55   60
Trp Asp Thr Ala Gly Gln Glu Arg Phe Arg Ala Val Thr Arg Ser Tyr
65   70   75   80
Tyr Arg Gly Ala Ala Gly Ala Leu Met Val Tyr Asp Ile Thr Arg Arg
                85   90   95
Ser Thr Tyr Asn His Leu Ser Ser Trp Leu Thr Asp Ala Arg Asn Leu
                100   105   110
Thr Asn Pro Asn Thr Val Ile Ile Leu Ile Gly Asn Lys Ala Asp Leu
            115   120   125
Glu Ala Gln Arg Asp Val Thr Tyr Glu Glu Ala Lys Gln Phe Ala Glu
        130   135   140
Glu Asn Gly Leu Leu Phe Leu Glu Ala Ser Ala Lys Thr Gly Glu Asn
145   150   155   160
Val Glu Asp Ala Phe Leu Glu Ala Ala Lys Lys Ile Tyr Gln Asn Ile
                165   170   175
Gln Asp Gly Ser Leu Asp Leu Asn Ala Ala Glu Ser Gly Val Gln His
                180   185   190
Lys Pro Ser Ala Pro Gln Gly Gly Arg Leu Thr Ser Glu Pro Gln Pro
            195   200   205
Gln Arg Glu Gly Cys Gly Cys
        210   215

<210> 4975
<211> 1111
<212> DNA
<213> Homo sapiens

<400> 4975
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120
tcagacacgg ctacttctgc ttccacgagg ctgctgacca gaagaggttt agtgccctcc
180
tgagtgactg cgtcaggcat ctcaatcatg attacatgaa gcagatgaca tttgaagccc
240

4145

aggccttttt agaagctgtg caattcttcc gacaggagaa gggtcactat ggttcctggg
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aaatgatcac tggggatgaa atccagatcc tgagtaacct ggtgatggag gagctcctgc
360
ccactcttca gacagacctg ctgcctaaga tgaaggggaa gaagaatgac agaaagagga
420
cgtggcttgg tctcctcgag gaggcctaca ccctggttca gcatcaagtt tcagaaggat
480
taagtgcctt gaaggaggaa tgcagagctc tgacaaaggg cctggaagga acgatccgtt
540
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600
tggcccagcc ggcggagaaa agctgcttgg agagtgtgca gccattcctg catccatcc
660
tggaggagct catgggacca gtgagctcgg gattcagtga agtacgtgta ctctttgaga
720
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780
agcatctaga ccggcttatg aatcttccgc tgcattccgt gaagatggaa ccttgttata
840
ctaaagtcaa cctgcttcac gagcgcctgc aggatctcaa gagccgcttc agattccccc
900
acattgatct ggtggttcag aggacacaga actacatgca ggagctaatg gagaatgcag
960
tgttcacttt tgagcagttg ctttccccac atctccaagg agaggcctcc aaaactgcat
1020
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1080
tccgaaagaa gatatttcaa gaggcactag t
1111

<210> 4976
<211> 298
<212> PRT
<213> Homo sapiens

<400> 4976
Met Lys Gln Met Thr Phe Glu Ala Gln Ala Phe Leu Glu Ala Val Gln
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Phe Phe Arg Gln Glu Lys Gly His Tyr Gly Ser Trp Glu Met Ile Thr
            20   25   30
Gly Asp Glu Ile Gln Ile Leu Ser Asn Leu Val Met Glu Glu Leu Leu
        35   40   45
Pro Thr Leu Gln Thr Asp Leu Leu Pro Lys Met Lys Gly Lys Lys Asn
    50   55   60
Asp Arg Lys Arg Thr Trp Leu Gly Leu Leu Glu Glu Ala Tyr Thr Leu
65   70   75   80
Val Gln His Gln Val Ser Glu Gly Leu Ser Ala Leu Lys Glu Glu Cys
                85   90   95
Arg Ala Leu Thr Lys Gly Leu Glu Gly Thr Ile Arg Ser Asp Met Asp
            100   105   110
Gln Ile Val Asn Ser Lys Asn Tyr Leu Ile Gly Lys Ile Lys Ala Met
        115   120   125
Val Ala Gln Pro Ala Glu Lys Ser Cys Leu Glu Ser Val Gln Pro Phe

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            130                  135                  140
Leu Ala Ser Ile Leu Glu Glu Leu Met Gly Pro Val Ser Ser Gly Phe
145                  150                  155                  160
Ser Glu Val Arg Val Leu Phe Glu Lys Glu Val Asn Glu Val Ser Gln
                165                  170                  175
Asn Phe Gln Thr Thr Lys Asp Ser Val Gln Leu Lys Glu His Leu Asp
            180                  185                  190
Arg Leu Met Asn Leu Pro Leu His Ser Val Lys Met Glu Pro Cys Tyr
        195                  200                  205
Thr Lys Val Asn Leu Leu His Glu Arg Leu Gln Asp Leu Lys Ser Arg
    210                  215                  220
Phe Arg Phe Pro His Ile Asp Leu Val Val Gln Arg Thr Gln Asn Tyr
225                  230                  235                  240
Met Gln Glu Leu Met Glu Asn Ala Val Phe Thr Phe Glu Gln Leu Leu
                245                  250                  255
Ser Pro His Leu Gln Gly Glu Ala Ser Lys Thr Ala Phe Ser Ile Glu
            260                  265                  270
Lys Val Lys Leu Arg Val Leu Lys Gln Tyr Asp Tyr Asp Ser Ser Thr
        275                  280                  285
Ile Arg Lys Lys Ile Phe Gln Glu Ala Leu
    290                  295
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<210> 4977
<211> 3309
<212> DNA
<213> Homo sapiens

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120
tccccaaact aactggtgtc ttttctcctc ttccaagatg ctcttcccga gggagatgct
180
agccctttgg gtccttacct cctgccctca ggagccccgg agagaggcag tcctggcaaa
240
gagcaccctg aagagagagt ggtaacagcg ccccccagtt cctcacagtc ggcggaagtg
300
ctgggcgagc tggtgctgga tgggaccgca ccctctgcac atcacgacat cccagccctg
360
tcaccgctgc ttccagagga ggcccgcccc aagcacgcct tgccccccaa gaagaaactg
420
ccttcgctca agcaggtgaa ctctgccagg aagcagctga ggcccaaggc cacctccgca
480
gccactgtcc aaagggcagg gtcccagcca gcgtcccagg gctagatct cctctcctcc
540
tccacggaga agcctggccc accggggac ccggacccca tcgtggcctc cgaggaggca
600
tcagaagtgc ccctttggct ggaccgaaag gagagtgcgg tccctacaac acccgcaccc
660
ctgcaaatct ccccctttcac ttcgcagccc tatgtggccc acacactccc ccagaggcca
720
gaacccgggg agcctgggcc tgacatggcc caggaggccc cccaggagga caccagcccc
780
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atggccctga tggacaaagg tgagaatgag ctgactgggt cagcctcaga ggagagccag
840
gagaccacta cctccaccat tatcaccacc acggtcatca ccaccgagca ggcaccagct
900
ctctgcagtg tgagcttctc caatcctgag gggtacattg actccagcga ctacccactg
960
ctgcccctca acaactttct ggagtgcaca tacaacgtga cagtctacac tggctatggg
1020
gtggagctcc aggtgaagag tgtgaacctg tccgatgggg aactgctctc catccgcggg
1080
gtggacggcc ctaccctgac cgtcctggcc aaccagacac tcctggtgga ggggcaggta
1140
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1200
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1380
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1920
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2100
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2160
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2220
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2280
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2340
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2400
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2460
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2520
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2700
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2760
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2820
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2880
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3000
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3180
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3300
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3309

<210> 4978
<211> 792
<212> PRT
<213> Homo sapiens

<400> 4978
Met Ala Gln Glu Ala Pro Gln Glu Asp Thr Ser Pro Met Ala Leu Met
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Asp Lys Gly Glu Asn Glu Leu Thr Gly Ser Ala Ser Glu Glu Ser Gln
            20                  25                  30
Glu Thr Thr Thr Ser Thr Ile Ile Thr Thr Thr Val Ile Thr Thr Glu
        35                  40                  45
Gln Ala Pro Ala Leu Cys Ser Val Ser Phe Ser Asn Pro Glu Gly Tyr
    50                  55                  60
Ile Asp Ser Ser Asp Tyr Pro Leu Leu Pro Leu Asn Asn Phe Leu Glu
65                  70                  75                  80
Cys Thr Tyr Asn Val Thr Val Tyr Thr Gly Tyr Gly Val Glu Leu Gln
                85                  90                  95
Val Lys Ser Val Asn Leu Ser Asp Gly Glu Leu Leu Ser Ile Arg Gly
            100                 105                 110
Val Asp Gly Pro Thr Leu Thr Val Leu Ala Asn Gln Thr Leu Leu Val
```

```
                115                   120                   125
Glu Gly Gln Val Ile Arg Ser Pro Thr Asn Thr Ile Ser Val Tyr Phe
        130                   135                   140
Arg Thr Phe Gln Asp Asp Gly Leu Gly Thr Phe Gln Leu His Tyr Gln
145                   150                   155                   160
Ala Phe Met Leu Ser Cys Asn Phe Pro Arg Arg Pro Asp Ser Gly Asp
                165                   170                   175
Val Thr Val Met Asp Leu His Ser Gly Gly Val Ala His Phe His Cys
            180                   185                   190
His Leu Gly Tyr Glu Leu Gln Gly Ala Lys Met Leu Thr Cys Ile Asn
        195                   200                   205
Ala Ser Lys Pro His Trp Ser Ser Gln Glu Pro Ile Cys Ser Ala Pro
    210                   215                   220
Cys Gly Gly Ala Val His Asn Ala Thr Ile Gly Arg Val Leu Ser Pro
225                   230                   235                   240
Ser Tyr Pro Glu Asn Thr Asn Gly Ser Gln Phe Cys Ile Trp Thr Ile
                245                   250                   255
Glu Ala Pro Glu Gly Gln Lys Leu His Leu His Phe Glu Arg Leu Leu
            260                   265                   270
Leu His Asp Lys Asp Arg Met Thr Val His Ser Gly Gln Thr Asn Lys
        275                   280                   285
Ser Ala Leu Leu Tyr Asp Ser Leu Gln Thr Glu Ser Val Pro Phe Glu
    290                   295                   300
Gly Leu Leu Ser Glu Gly Asn Thr Ile Arg Ile Glu Phe Thr Ser Asp
305                   310                   315                   320
Gln Ala Arg Ala Ala Ser Thr Phe Asn Ile Arg Phe Glu Ala Phe Glu
                325                   330                   335
Lys Gly His Cys Tyr Glu Pro Tyr Ile Gln Asn Gly Asn Phe Thr Thr
            340                   345                   350
Ser Asp Pro Thr Tyr Asn Ile Gly Thr Ile Val Glu Phe Thr Cys Asp
        355                   360                   365
Pro Gly His Ser Leu Glu Gln Gly Pro Ala Ile Ile Glu Cys Ile Asn
    370                   375                   380
Val Arg Asp Pro Tyr Trp Asn Asp Thr Glu Pro Leu Cys Arg Ala Met
385                   390                   395                   400
Cys Gly Gly Glu Leu Ser Ala Val Ala Gly Val Val Leu Ser Pro Asn
                405                   410                   415
Trp Pro Glu Pro Tyr Val Glu Gly Glu Asp Cys Ile Trp Lys Ile His
            420                   425                   430
Val Gly Glu Glu Lys Arg Ile Phe Leu Asp Ile Gln Phe Leu Asn Leu
        435                   440                   445
Ser Asn Ser Asp Ile Leu Thr Ile Tyr Asp Gly Asp Glu Val Met Pro
    450                   455                   460
His Ile Leu Gly Gln Tyr Leu Gly Asn Ser Gly Pro Gln Lys Leu Tyr
465                   470                   475                   480
Ser Ser Thr Pro Asp Leu Thr Ile Gln Phe His Ser Asp Pro Ala Gly
                485                   490                   495
Leu Ile Phe Gly Lys Gly Gln Gly Phe Ile Met Asn Tyr Ile Glu Val
            500                   505                   510
Ser Arg Asn Asp Ser Cys Ser Asp Leu Pro Glu Ile Gln Asn Gly Trp
        515                   520                   525
Lys Thr Thr Ser His Thr Glu Leu Val Arg Gly Ala Arg Ile Thr Tyr
    530                   535                   540
Gln Cys Asp Pro Gly Tyr Asp Ile Val Gly Ser Asp Thr Leu Thr Cys .
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                                  4150

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545                    550                    555                    560
Gln Trp Asp Leu Ser Trp Ser Ser Asp Pro Pro Phe Cys Glu Lys Ile
                565                    570                    575
Met Tyr Cys Thr Asp Pro Gly Glu Val Asp His Ser Thr Arg Leu Ile
                580                    585                    590
Ser Asp Pro Val Leu Leu Val Gly Thr Thr Ile Gln Tyr Thr Cys Asn
            595                    600                    605
Pro Gly Phe Val Leu Glu Gly Ser Ser Leu Leu Thr Cys Tyr Ser Arg
        610                    615                    620
Glu Thr Gly Thr Pro Ile Trp Thr Ser Arg Leu Pro His Cys Val Ser
625                    630                    635                    640
Glu Glu Ser Leu Ala Cys Asp Asn Pro Gly Leu Pro Glu Asn Gly Tyr
                645                    650                    655
Gln Ile Leu Tyr Lys Arg Leu Tyr Leu Pro Gly Glu Ser Leu Thr Phe
                660                    665                    670
Met Cys Tyr Glu Gly Phe Glu Leu Met Gly Glu Val Thr Ile Arg Cys
            675                    680                    685
Ile Leu Gly Gln Pro Ser His Trp Asn Gly Pro Leu Pro Val Cys Lys
        690                    695                    700
Val Asn Gln Asp Ser Phe Glu His Ala Leu Glu Ala Glu Ala Ala Ala
705                    710                    715                    720
Glu Thr Ser Leu Glu Gly Gly Asn Met Ala Leu Ala Ile Phe Ile Pro
                725                    730                    735
Val Leu Ile Ile Ser Leu Leu Leu Gly Gly Ala Tyr Ile Tyr Ile Thr
                740                    745                    750
Arg Cys Arg Tyr Tyr Ser Asn Leu Arg Leu Pro Leu Met Tyr Ser His
                755                    760                    765
Pro Tyr Ser Gln Ile Thr Val Glu Thr Glu Phe Asp Asn Pro Ile Tyr
        770                    775                    780
Glu Thr Gly Gly Thr Gln Lys Val
785                    790
```

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<210> 4979
<211> 1865
<212> DNA
<213> Homo sapiens
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<400> 4979
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60
cgtgtgtgtg tgtgtgtgtg tgtgtgtgtg tgtgtgtgtg tggagctcgg gtgccaaggg
120
cgagccgtca gtccccgggt gcgagtccct gctgtcttcc acaccttcc tccctccagg
180
ctcctttcct acatccttcc cgcgccccca cggttgcgga ccgagcgaga acccccttaa
240
gcaggtgtgg ggggcgtgcg gggtggcacg agacaaaagg ggcacggggg taagcccgcc
300
atggcctccc ggagcctggg gggcctgagc gggatccgcg gcggtggcgg cggaggcggc
360
aagaaaagcc tgagcgcccg caatgctgcg gtggagagga ggaacctgat caccgtgtgc
420
aggtttttctg tgaagaccct gattgatcgg tcttgctttg agacaattga tgattcttct
480
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cctgaatttta acaattttgc agctattttg gaacagattt taagccaccg gctaaaaggt
540
caagtaacct ggtttggtta tgaaagtcct cgtagcttct gggactatat cagagtggct
600
tgccggaaag tttcacagaa ttgtatctgc agcattgaaa atatggaaaa tgtcagttct
660
tctagagcta agggtagagc ctggatcaga gtagcactca tggaaaaaca tttatctgaa
720
tacatctcta cagctctgag agacttcaaa acaaccagga gatttttatga agatggagca
780
attgtcttgg gtgaagaagc aaatatgctt gctggcatgc ttctaggact caatgctatt
840
gatttcagtt tctgcctaaa gggagagggg ctggatggca gttttcctgc tgtaatagac
900
tatacaccat atttgaagta tatccaaagt tctgatagta tcagcagtga tgaggaggag
960
ctaaggactt tgggaagcag tggtagcgaa agcagtactc cagagaatgt cggacctcct
1020
ttcctcatgg atgagaacag ttggttcaac aagtgtaaga gagttaaaca aaagtatcag
1080
cttaccctgg aacagaaggg ttaccttgaa gaactcttac gacttcgaga gaaccaacta
1140
tctgaatctg tctcccagaa taaaatacta cttcaaagga ttgaagattc cgatctggct
1200
cataaactgg agaaggaaca attagaatat ataattgtgg agcttcaaga tcagctgact
1260
gtgctaaaga ataatgattt aagatcgaga caagagttaa ctgcccatct caccaaccag
1320
tggccttctc caggagctct ggatgtcaat gctgttgcct tggatacgtt gctttaccga
1380
aaacacaata aacagtggaa aagttatcaa agtcttgacc agttatcagc agaagttagc
1440
ctttctcaga cttcactaga tccaggccag tcacaagaag gagatggaaa acaagacaca
1500
ttaaatgtaa tgagtgaagg taaggaagat actccctcat tacttggcct ctgtggatct
1560
ctaacgtcag tggcaagtta caagtctcta acaagcttaa aatctaatga ctaccttgca
1620
agtcctacaa cagagatgac aagtccaggc ctaactccat cctgaaaatt tttgtgtaaa
1680
agccaaaact ttttatgttg taaatgttta atttacatgt ttgactgctg ggaagacctt
1740
tgaaatttta tattgttctg gtacatgtct gaaattctat tgcttggaga gaatcccctc
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1860
ttaca
1865
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```
<210> 4980
<211> 266
<212> PRT
<213> Homo sapiens
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<400> 4980
Glu Gly Leu Asp Gly Ser Phe Pro Ala Val Ile Asp Tyr Thr Pro Tyr
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Leu Lys Tyr Ile Gln Ser Ser Asp Ser Ile Ser Ser Asp Glu Glu Glu
            20   25   30
Leu Arg Thr Leu Gly Ser Ser Gly Ser Glu Ser Ser Thr Pro Glu Asn
        35   40   45
Val Gly Pro Pro Phe Leu Met Asp Glu Asn Ser Trp Phe Asn Lys Cys
    50   55   60
Lys Arg Val Lys Gln Lys Tyr Gln Leu Thr Leu Glu Gln Lys Gly Tyr
65   70   75   80
Leu Glu Glu Leu Leu Arg Leu Arg Glu Asn Gln Leu Ser Glu Ser Val
                85   90   95
Ser Gln Asn Lys Ile Leu Leu Gln Arg Ile Glu Asp Ser Asp Leu Ala
            100   105   110
His Lys Leu Glu Lys Glu Gln Leu Glu Tyr Ile Ile Val Glu Leu Gln
        115   120   125
Asp Gln Leu Thr Val Leu Lys Asn Asn Asp Leu Arg Ser Arg Gln Glu
    130   135   140
Leu Thr Ala His Leu Thr Asn Gln Trp Pro Ser Pro Gly Ala Leu Asp
145   150   155   160
Val Asn Ala Val Ala Leu Asp Thr Leu Leu Tyr Arg Lys His Asn Lys
                165   170   175
Gln Trp Lys Ser Tyr Gln Ser Leu Asp Gln Leu Ser Ala Glu Val Ser
            180   185   190
Leu Ser Gln Thr Ser Leu Asp Pro Gly Gln Ser Gln Glu Gly Asp Gly
        195   200   205
Lys Gln Asp Thr Leu Asn Val Met Ser Glu Gly Lys Glu Asp Thr Pro
    210   215   220
Ser Leu Leu Gly Leu Cys Gly Ser Leu Thr Ser Val Ala Ser Tyr Lys
225   230   235   240
Ser Leu Thr Ser Leu Lys Ser Asn Asp Tyr Leu Ala Ser Pro Thr Thr
                245   250   255
Glu Met Thr Ser Pro Gly Leu Thr Pro Ser
                260   265

<210> 4981
<211> 1902
<212> DNA
<213> Homo sapiens

<400> 4981
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atcctcaccg cagccctttc ctatgtgctg tgcaagagga ggaggggca gtcaccgcag
120
tcctctccag atctgccggt tcattatata cctgtggcac ctgactctaa tacctgagcc
180
aagaatggaa gtttgtgagg agacggactc tatgttgccc aggctgttat ggaactcctg
240
agtcaagtga tcctcccacc ttggcctctg aaggtgcgag gattataggc gtcacctacc
300
acatccagcc tacacgtatt tgttaatatc taacatagga ctaaccagcc actgccctct
360

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cttaggcccc tcatttaaaa acggttatac tataaaatct gcttttcaca ctgggtgata
420
ataacttgga caaattctat gtgtattttg ttttgttttg ctttgctttg ttttgagacg
480
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600
tcaccaccac acccggctaa tttttgtatt tttagtagag acggggtttc accatgttga
660
ccaggctggt ctcgaactcc tgacctggtg atctgcccac ccaggcctcc caaagtgctg
720
ggattaaagg tgtgagccac catgcctggc cctatgtgtg ttttttaact actaaaaatt
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840
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gtacaccagt tgttcctccc ccacctcagc cctctcctgc atcctcctgt acccgcaacg
960
aaggcctggg ctttcccacc ctccctcctt agcaggtgcc gtgctgggac accatacggg
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1080
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1140
tccgaatgaa gaagtatgta ttttcattag gccaagtctg cgggaaggct ggggcagcag
1200
catgaagtgt ttgaggaagt gggttgggta tgtcagtttc catctcctct ctgagcctgt
1260
cagggtgttt ctggagtgca gagcaggagc accctgctgg agaggccaag gcatagctgt
1320
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1380
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1440
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1500
cagcatctgc tcacaggttc gagccacatc actgagcttg aggcgggcat agtccactcg
1560
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tgtggccacc tgggtgaggt agcggatctg agctgacagc tccgcctcca cgtgttgcac
1680
tgaagcggtg aaggccgccg cctgccggtc taggagccgc tcgttagttt tttccttgga
1740
caattctagg atcacagtac ctgcattctg aaggatggcg ccgatttccc gttcaatgtc
1800
ttccagagcg cgtagtctct cgttcgccag gctgtaggta gccattatca ctctgggaat
1860
tctcaccaag agtttctcct cagaaacgcg acgcttgttc cc
1902

<210> 4982
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<211> 73
<212> PRT
<213> Homo sapiens

<400> 4982
Met Cys Ile Leu Phe Cys Phe Ala Leu Leu Cys Phe Glu Thr Glu Ser
1   5   10   15
Arg Ser Val Ile Gln Ala Gly Val Gln Trp His Asp Leu Gly Ser Leu
            20   25   30
Gln Pro Pro Ser Pro Arg Phe Lys Arg Phe Ser Cys Leu Leu Leu Ser
        35   40   45
Ser Trp Asp Tyr Arg Cys Ser Pro Pro His Pro Ala Asn Phe Cys Ile
    50   55   60
Phe Ser Arg Asp Gly Val Ser Pro Cys
65   70

<210> 4983
<211> 1418
<212> DNA
<213> Homo sapiens

<400> 4983
cgtggtttct catgccaata ctggtggaaa aatttccatt tgttcgaaaa tcagagagaa
60
cactggaatg ttacgttcat aacttactaa ggattagtgt atattttcca acccttgagg
120
catgaaattc tggagcttat tattgaaaaa ctactcaagt tggatgtgaa tgcatcccgg
180
cagggtattg aagatgctga agaaacagca actcaaactt ttggtgggac agattccacg
240
gaaggattgt ttaatatgga tgaagatgaa gaaactgaac atgaaacaaa ggctggtcct
300
gaacggctcg accagatggt gcatcctgta gccgagcgcc tggacatcct gatgtctttg
360
gttttgtcct acatgaagga tgtctgctat gtagatggta aggttgataa cggcaaaaca
420
aaggatctat atcgcgacct gataaacatc tttgacaaac tcctgttgcc cacccatgcc
480
tcctgccatg tacagttttt catgtttttac ctctgtagtt tcaaattggg attcgcagag
540
gcatttttgg aacatctctg gaaaaaattg caggacccaa gtaatcctgc catcatcagg
600
caggctgctg gaaattatat tggaagcttt ttggcaagag ctaaatttat tcctcttatt
660
actgtaaaat catgcctaga tcttttggtt aactggctgc acatatacct taataaccag
720
gattcgggaa caaaggcatt ctgcgatgtt gctctccatg gaccattta ctcagcctgc
780
caagctgtgt tctacacctt tgtttttaga cacaagcagc ttttgagcgg aaacctgaaa
840
gaaggtttgc agtatcttca gagtctgaat tttgagcgga tagtgatgag ccagctaaat
900
cccctgaaga tttgcctgcc ctcagtggtt aacttttttg ctgcaatcac aaataagtac
960

cagctcgtct tctgctacac catcattgag aggaacaatc gccagatgct gccagtcatt
1020
aggagtaccg ctggaggaga ctcagtgcag acctgcacaa acccactgga caccttcttc
1080
ccctttgatc cctgtgtgct gaagaggtca aagaaattca ttgatcctat ttatcaggtg
1140
tgggaagaca tgagtgctga agagctacag gagttcaaga aacccatgaa aaaggacata
1200
gtggaagatg aagatgatga ctttctgaaa ggcgaaattc cccagaaatt agtagtaagt
1260
ggggtctttg tgggttggga agtagtttta atgtagaaag acatttacat ataagtctgt
1320
ttaatttcaa aggagtttgt gaaaaaaaat ccatggtgaa aatgaaacaa tgacatggtt
1380
aatctggaac ttacgttctt ataccaataa aaggtacc
1418

<210> 4984
<211> 256
<212> PRT
<213> Homo sapiens

<400> 4984
Leu Gly Phe Ala Glu Ala Phe Leu Glu His Leu Trp Lys Lys Leu Gln
1   5   10   15
Asp Pro Ser Asn Pro Ala Ile Ile Arg Gln Ala Ala Gly Asn Tyr Ile
            20   25   30
Gly Ser Phe Leu Ala Arg Ala Lys Phe Ile Pro Leu Ile Thr Val Lys
        35   40   45
Ser Cys Leu Asp Leu Leu Val Asn Trp Leu His Ile Tyr Leu Asn Asn
        50   55   60
Gln Asp Ser Gly Thr Lys Ala Phe Cys Asp Val Ala Leu His Gly Pro
65   70   75   80
Phe Tyr Ser Ala Cys Gln Ala Val Phe Tyr Thr Phe Val Phe Arg His
                85   90   95
Lys Gln Leu Leu Ser Gly Asn Leu Lys Glu Gly Leu Gln Tyr Leu Gln
            100   105   110
Ser Leu Asn Phe Glu Arg Ile Val Met Ser Gln Leu Asn Pro Leu Lys
        115   120   125
Ile Cys Leu Pro Ser Val Val Asn Phe Phe Ala Ala Ile Thr Asn Lys
        130   135   140
Tyr Gln Leu Val Phe Cys Tyr Thr Ile Ile Glu Arg Asn Asn Arg Gln
145   150   155   160
Met Leu Pro Val Ile Arg Ser Thr Ala Gly Gly Asp Ser Val Gln Thr
                165   170   175
Cys Thr Asn Pro Leu Asp Thr Phe Phe Pro Phe Asp Pro Cys Val Leu
            180   185   190
Lys Arg Ser Lys Lys Phe Ile Asp Pro Ile Tyr Gln Val Trp Glu Asp
            195   200   205
Met Ser Ala Glu Glu Leu Gln Glu Phe Lys Lys Pro Met Lys Lys Asp
        210   215   220
Ile Val Glu Asp Glu Asp Asp Asp Phe Leu Lys Gly Glu Ile Pro Gln
225   230   235   240
Lys Leu Val Val Ser Gly Val Phe Val Gly Trp Glu Val Val Leu Met

245   250   255

<210> 4985
<211> 5695
<212> DNA
<213> Homo sapiens

<400> 4985
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aggccggggg tgaccttgcc ccctggagcc ctcaccatga ataccaagga caccaccgag
120
gttgctgaaa acagccacca cctgaagatc tttctcccca agaagctgct ggagtgtctt
180
cctcgctgcc cgctgctgcc tccagagagg ctacggtgga atacaaatga ggagattgca
240
tcctacctga tcacctttga gaagcatgat gagtggctgt cttgtgcccc aaagacaagg
300
cctcagaatg gctccatcat cctctacaat cgcaagaagg tgaaatatcg gaaggatggt
360
tacctctgga agaagcggaa ggatgggaag accacccgag aggaccacat gaagctgaag
420
gtccagggca tggagcctgt ctcctggcag tgtctctatg gctgctacgt tcactcttcc
480
atcgtcccca cattccatcg gcgctgctac tggctgctcc agaaccctga catcgtcctt
540
gtgcactacc tgaacgtccc agccctggag gactgtggaa agggctgcag ccccatcttt
600
tgttccatca gcagcgaccg tcgagagtgg ctgaagtggt cccgggagga gttgttggga
660
cagctgaagc ccatgtttca tggcatcaag tggagctgcg ggaatggaac agaagagttc
720
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<211> 1239
<212> PRT
<213> Homo sapiens

<400> 4986
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            20                  25                  30
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        35                  40                  45
Lys Ile Phe Leu Pro Lys Lys Leu Leu Glu Cys Leu Pro Arg Cys Pro
    50                  55                  60
Leu Leu Pro Pro Glu Arg Leu Arg Trp Asn Thr Asn Glu Glu Ile Ala
65                  70                  75                  80
Ser Tyr Leu Ile Thr Phe Glu Lys His Asp Glu Trp Leu Ser Cys Ala
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Pro Lys Thr Arg Pro Gln Asn Gly Ser Ile Ile Leu Tyr Asn Arg Lys
            100                   105                   110
Lys Val Lys Tyr Arg Lys Asp Gly Tyr Leu Trp Lys Lys Arg Lys Asp
        115                   120                   125
Gly Lys Thr Thr Arg Glu Asp His Met Lys Leu Lys Val Gln Gly Met
        130                   135                   140
Glu Pro Val Ser Trp Gln Cys Leu Tyr Gly Cys Tyr Val His Ser Ser
145                   150                   155                   160
Ile Val Pro Thr Phe His Arg Arg Cys Tyr Trp Leu Leu Gln Asn Pro
                165                   170                   175
Asp Ile Val Leu Val His Tyr Leu Asn Val Pro Ala Leu Glu Asp Cys
            180                   185                   190
Gly Lys Gly Cys Ser Pro Ile Phe Cys Ser Ile Ser Ser Asp Arg Arg
        195                   200                   205
Glu Trp Leu Lys Trp Ser Arg Glu Glu Leu Leu Gly Gln Leu Lys Pro
    210                   215                   220
Met Phe His Gly Ile Lys Trp Ser Cys Gly Asn Gly Thr Glu Glu Phe
225                   230                   235                   240
Ser Val Glu His Leu Val Gln Gln Ile Leu Asp Thr His Pro Thr Lys
                245                   250                   255
Pro Ala Pro Arg Thr His Ala Cys Leu Cys Ser Gly Gly Leu Gly Ser
            260                   265                   270
Gly Ser Leu Thr His Lys Cys Ser Ser Thr Lys His Arg Ile Ile Ser
        275                   280                   285
Pro Lys Val Glu Pro Arg Ala Leu Thr Leu Thr Ser Ile Pro His Pro
    290                   295                   300
His Pro Pro Glu Pro Pro Pro Leu Ile Ala Pro Leu Pro Pro Glu Leu
305                   310                   315                   320
Pro Lys Ala His Thr Ser Pro Ser Ser Ser Ser Ser Ser Ser Ser Ser
                325                   330                   335
Gly Phe Ala Glu Pro Leu Glu Ile Arg Pro Ser Pro Pro Thr Ser Arg
            340                   345                   350
Gly Gly Ser Ser Arg Gly Gly Thr Ala Ile Leu Leu Leu Thr Gly Leu
        355                   360                   365
Glu Gln Arg Ala Gly Gly Leu Thr Pro Thr Arg His Leu Ala Pro Gln
    370                   375                   380
Ala Asp Pro Arg Pro Ser Met Ser Leu Ala Val Val Val Gly Thr Glu
385                   390                   395                   400
Pro Ser Ala Pro Pro Ala Pro Pro Ser Pro Ala Phe Asp Pro Asp Arg
            405                   410                   415
Phe Leu Asn Ser Pro Gln Arg Gly Gln Thr Tyr Gly Gly Gly Gln Gly
            420                   425                   430
Val Ser Pro Asp Phe Pro Glu Ala Glu Ala Ala His Thr Pro Cys Ser
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Ala Leu Glu Pro Ala Ala Ala Leu Glu Pro Gln Ala Ala Ala Arg Gly
    450                   455                   460
Pro Pro Pro Gln Ser Val Ala Gly Gly Arg Arg Gly Asn Cys Phe Phe
465                   470                   475                   480
Ile Gln Asp Asp Asp Ser Gly Glu Glu Leu Lys Gly His Gly Ala Ala
                485                   490                   495
Pro Pro Ile Pro Ser Pro Pro Pro Ser Pro Pro Pro Ser Pro Ala Pro
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Leu Glu Pro Ser Ser Arg Val Gly Arg Gly Glu Ala Leu Phe Gly Gly
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     Asp Leu Met Gly Glu Leu Ile Ser Asp Glu Ala Pro Ser Ile Pro Ala
     545                    550                    555                    560
     Pro Thr Pro Gln Leu Ser Pro Ala Leu Ser Thr Ile Thr Asp Phe Ser
                 565                    570                    575
     Pro Glu Trp Ser Tyr Pro Glu Gly Gly Val Lys Val Leu Ile Thr Gly
                 580                    585                    590
     Pro Trp Thr Glu Ala Ala Glu His Tyr Ser Cys Val Phe Asp His Ile
                 595                    600                    605
     Ala Val Pro Ala Ser Leu Val Gln Pro Gly Val Leu Arg Cys Tyr Cys
         610                    615                    620
     Pro Ala His Glu Val Gly Leu Val Ser Leu Gln Val Ala Gly Arg Glu
     625                    630                    635                    640
     Gly Pro Leu Ser Ala Ser Val Leu Phe Glu Tyr Arg Ala Arg Arg Phe
                 645                    650                    655
     Leu Ser Leu Pro Ser Thr Gln Leu Asp Trp Leu Ser Leu Asp Asp Asn
                 660                    665                    670
     Gln Phe Arg Met Ser Ile Leu Glu Arg Leu Glu Gln Met Glu Lys Arg
                 675                    680                    685
     Met Ala Glu Ile Ala Ala Ala Gly Gln Val Pro Cys Gln Gly Pro Asp
         690                    695                    700
     Ala Pro Pro Val Gln Asp Glu Gly Gln Gly Pro Gly Phe Glu Ala Arg
     705                    710                    715                    720
     Val Val Val Leu Val Glu Ser Met Ile Pro Arg Ser Thr Trp Lys Gly
                 725                    730                    735
     Pro Glu Arg Leu Ala His Gly Ser Pro Phe Arg Gly Met Ser Leu Leu
                 740                    745                    750
     His Leu Ala Ala Ala Gln Gly Tyr Ala Arg Leu Ile Glu Thr Leu Ser
                 755                    760                    765
     Gln Trp Arg Ser Val Glu Thr Gly Ser Leu Asp Leu Glu Gln Glu Val
         770                    775                    780
     Asp Pro Leu Asn Val Asp His Phe Ser Cys Thr Pro Leu Met Trp Ala
     785                    790                    795                    800
     Cys Ala Leu Gly His Leu Glu Ala Ala Val Leu Leu Phe Arg Trp Asn
                 805                    810                    815
     Arg Gln Ala Leu Ser Ile Pro Asp Ser Leu Gly Arg Leu Pro Leu Ser
                 820                    825                    830
     Val Ala His Ser Arg Gly His Val Arg Leu Ala Arg Cys Leu Glu Glu
                 835                    840                    845
     Leu Gln Arg Gln Glu Pro Ser Val Glu Pro Pro Phe Ala Leu Ser Pro
         850                    855                    860
     Pro Ser Ser Ser Pro Asp Thr Gly Leu Ser Ser Val Ser Ser Pro Ser
     865                    870                    875                    880
     Glu Leu Ser Asp Gly Thr Phe Ser Val Thr Ser Ala Tyr Ser Ser Ala
                 885                    890                    895
     Pro Asp Gly Ser Pro Pro Ala Pro Leu Pro Ala Ser Glu Met Thr
                 900                    905                    910
     Met Glu Asp Met Ala Pro Gly Gln Leu Ser Ser Gly Val Pro Glu Ala
         915                    920                    925
     Pro Leu Leu Leu Met Asp Tyr Glu Ala Thr Asn Ser Lys Gly Pro Leu
         930                    935                    940
     Ser Ser Leu Pro Ala Leu Pro Pro Ala Ser Asp Asp Gly Ala Ala Pro
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Glu Asp Ala Asp Ser Pro Gln Ala Val Asp Val Ile Pro Val Asp Met
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Ile Ser Leu Ala Lys Gln Ile Ile Glu Ala Thr Pro Glu Arg Ile Lys
            980                    985                    990
Arg Glu Asp Phe Val Gly Leu Pro Glu Ala Gly Ala Ser Met Arg Glu
        995                    1000                   1005
Arg Thr Gly Ala Val Gly Leu Ser Glu Thr Met Ser Trp Leu Ala Ser
    1010                   1015                   1020
Tyr Leu Glu Asn Val Asp His Phe Pro Ser Ser Thr Pro Pro Ser Glu
1025                   1030                   1035                   1040
Leu Pro Phe Glu Arg Gly Arg Leu Ala Val Pro Ser Ala Pro Ser Trp
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Ala Glu Phe Leu Ser Ala Ser Thr Ser Gly Lys Met Glu Ser Asp Phe
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Ala Leu Leu Thr Leu Ser Asp His Glu Gln Arg Glu Leu Tyr Glu Ala
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Ala Arg Val Ile Gln Thr Ala Phe Arg Lys Tyr Lys Gly Arg Arg Leu
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Lys Glu Gln Gln Glu Val Ala Ala Ala Val Ile Gln Arg Cys Tyr Arg
1105                   1110                   1115                   1120
Lys Tyr Lys Gln Leu Thr Trp Ile Ala Leu Lys Phe Ala Leu Tyr Lys
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Lys Met Thr Gln Ala Ala Ile Leu Ile Gln Ser Lys Phe Arg Ser Tyr
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Tyr Glu Gln Lys Arg Phe Gln Gln Ser Arg Arg Ala Ala Val Leu Ile
        1155                   1160                   1165
Gln Gln His Tyr Arg Ser Tyr Arg Arg Pro Gly Pro Pro His Arg
    1170                   1175                   1180
Thr Ser Ala Thr Leu Pro Ala Arg Asn Lys Gly Ser Phe Leu Thr Lys
1185                   1190                   1195                   1200
Lys Gln Asp Gln Ala Ala Arg Lys Ile Met Arg Phe Leu Arg Arg Cys
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<211> 357
<212> DNA
<213> Homo sapiens

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<210> 4988
<211> 105
<212> PRT
<213> Homo sapiens

<400> 4988
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Ser Ser Ser Cys Asp Ser Glu Lys Lys Ser Leu Trp Leu Phe Ala Ala
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Phe Pro Leu Cys Phe Leu Gly Thr Ala Phe Pro Gln Gly Glu Gln Arg
        35   40   45
Pro Leu Glu Ala Lys Gly Leu Ala Thr Gln Gly Ala Ser Leu Pro Leu
    50   55   60
Leu Pro Thr Val Thr Cys Val Ser Ile Lys Ser Trp Lys Met Glu Cys
65   70   75   80
Pro His Gln Gly Asp Gly Val Thr Thr Glu Ala Gly Ser Glu Leu Pro
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Gln Leu Leu Gln Ala Pro Trp Pro Arg
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<212> DNA
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<211> 54
<212> PRT
<213> Homo sapiens

<400> 4990
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            20   25   30
Glu Gln Ala Ser Phe Leu Ala Ser Ser Phe Ser Ser Ser Ala Gly Pro
        35   40   45
Arg Thr Ser Ile Ser Gly
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<210> 4991
<211> 828
<212> DNA
<213> Homo sapiens

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828

<210> 4992
<211> 69
<212> PRT
<213> Homo sapiens

<400> 4992
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            20   25   30
Glu Leu Arg Asp Lys Tyr Leu Glu Glu Lys Glu Asp Leu Glu Leu Lys
        35   40   45
Cys Ser Thr Leu Gly Lys Asp Cys Glu Met Tyr Lys His Arg Met Asn
    50   55   60
Thr Val Met Leu Gln
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<210> 4993
<211> 837
<212> DNA
<213> Homo sapiens

<400> 4993

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120
ccagtcagga gagagagact gagaaggcta tggatcgact agcccgtgga acacagagca
180
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240
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300
gtccacccaa ggaacagcct ggcgatcttt ttaatgagga ctgggactcg gagttgaaag
360
cagatcaagg gaatccatat gatgctgacg acatccagga gagcatttct caagagctta
420
aaccttgggt gtgctgtgcc ccacaaggag acatgatcta tgaccccagc tggcaccatc
480
cgcctccact gataccctat tattccaaga tggtctttga aacaggacag tttgacgatg
540
ctgaagattg agtgtggagc tttctgcctt gtaggtgggc gggcctccac gtcaagatct
600
cttttcctgt cttggaggtg aaaagtcata tctgagaaaa tgtttgcagt gacccctagt
660
ctggggtaca cagaccagtg ttccttattg acagtgttca ataaggcccc gtcattctcg
720
ccagtctgtt gttgttctta atgggctcct ccttgaaatg tgtgtgtgtt tgtgtcaaga
780
ggagttgtgt tctttgtaaa taaaggttaa aaagagaaac caaaaaaaaa aaaaaaa
837
```

<210> 4994
<211> 133
<212> PRT
<213> Homo sapiens

<400> 4994
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Met Asp Arg Leu Ala Arg Gly Thr Gln Ser Ile Pro Asn Asp Ser Pro
 1               5                  10                  15
Ala Arg Gly Glu Gly Thr His Ser Glu Glu Glu Gly Phe Ala Met Asp
                20                  25                  30
Glu Glu Asp Ser Asp Gly Glu Leu Asn Thr Trp Glu Leu Ser Glu Gly
        35                  40                  45
Thr Asn Cys Pro Pro Lys Glu Gln Pro Gly Asp Leu Phe Asn Glu Asp
    50                  55                  60
Trp Asp Ser Glu Leu Lys Ala Asp Gln Gly Asn Pro Tyr Asp Ala Asp
65                  70                  75                  80
Asp Ile Gln Glu Ser Ile Ser Gln Glu Leu Lys Pro Trp Val Cys Cys
                85                  90                  95
Ala Pro Gln Gly Asp Met Ile Tyr Asp Pro Ser Trp His His Pro Pro
                100                 105                 110
Pro Leu Ile Pro Tyr Tyr Ser Lys Met Val Phe Glu Thr Gly Gln Phe
        115                 120                 125
Asp Asp Ala Glu Asp
    130
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<210> 4995
<211> 1595
<212> DNA
<213> Homo sapiens

<400> 4995
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120
agcccaggca gatgtgaact cctggcaagg ggtgggcagg tccagtttgg gaagtcgggg
180
tggagcccag ggctggccct ggaatgcagt cctcagagcg gctgtgctca taggtcagaa
240
cgggaaacag ccgtacgcat ctcccaggag attgggaacc ttatgaagga aatcgagacc
300
cttgtggaag agaagaccaa ggagtcactg gatgtgagca gactgacccg ggaaggtggc
360
cccctgctgt atgaaggcat cagtctcacc atgaactcca aactcctgaa tggttcccag
420
cgggtggtga tggacggcgt aatctctgac cacgagtgtc aggagctgca gagactgacc
480
aatgtggcag caacctcagg agatggctac cggggtcaga cctccccaca tactcccaat
540
gaaaagttct atggtgtcac tgtcttcaaa gccctcaagc tggggcaaga aggcaaagtt
600
cctctgcaga gtgcccacct gtactacaac gtgacggaga aggtgcggcg catcatggag
660
tcctacttcc gcctggatac gcccctctac ttttcctact ctcatctggt gtgccgcact
720
gccatcgaag aggtccaggc agagaggaag gatgatagtc atccagtcca cgtggacaac
780
tgcatcctga atgccgagac cctcgtgtgt gtcaaagagc ccccagccta caccttccgc
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900
gaactggatg ccaagaccgt gacggcagag gtgtagcctc agtgtggaag agccgtggga
960
ttctcttcag gcactgaaaa cccacatgga gtgaaggctg tcaccagggg gcagcgctgt
1020
gccatcgccc tgtggttcac cctggaccct cgacacagcg agcgggacag ggtgcaggca
1080
gatgacctgg tgaagatgct cttcagccca gaagagatgg acctctccca ggagcagccc
1140
ctggatgccc agcagggccc ccccnngaac ctgcacaaga gtctctctca ggcagtgaat
1200
cgaagcccaa ggatgagcta tgacagcgtc caggtcagac ggatgggtga ctagacccat
1260
ggagaggaac tcttctgcac tctgagctgg ccagcccctc ggggctgcag agcagtgagc
1320
ctacatctgc cactcagccg aggggaccct gctcacagcc ttctacatgg tgctactgct
1380
cttggagtgg acatgaccag acaccgcacc ccctggatct ggctgagggc tcaggacaca
1440
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ggcccagcca cccccagggg cctccacagg ccgctgcata acagcgatac agtacttaag
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tgtctgtgta tacaaccaaa gaataaatga ttcatggttt tttttacttg gtttgttcag
1560
acaatggaaa tttgcccatt ctgtcaaaaa aaaaa
1595


<210> 4996
<211> 217
<212> PRT
<213> Homo sapiens

<400> 4996
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 1               5                  10                  15
Asp Val Ser Arg Leu Thr Arg Glu Gly Gly Pro Leu Leu Tyr Glu Gly
            20                  25                  30
Ile Ser Leu Thr Met Asn Ser Lys Leu Leu Asn Gly Ser Gln Arg Val
        35                  40                  45
Val Met Asp Gly Val Ile Ser Asp His Glu Cys Gln Glu Leu Gln Arg
    50                  55                  60
Leu Thr Asn Val Ala Ala Thr Ser Gly Asp Gly Tyr Arg Gly Gln Thr
65                  70                  75                  80
Ser Pro His Thr Pro Asn Glu Lys Phe Tyr Gly Val Thr Val Phe Lys
                85                  90                  95
Ala Leu Lys Leu Gly Gln Glu Gly Lys Val Pro Leu Gln Ser Ala His
            100                 105                 110
Leu Tyr Tyr Asn Val Thr Glu Lys Val Arg Arg Ile Met Glu Ser Tyr
        115                 120                 125
Phe Arg Leu Asp Thr Pro Leu Tyr Phe Ser Tyr Ser His Leu Val Cys
    130                 135                 140
Arg Thr Ala Ile Glu Glu Val Gln Ala Glu Arg Lys Asp Asp Ser His
145                 150                 155                 160
Pro Val His Val Asp Asn Cys Ile Leu Asn Ala Glu Thr Leu Val Cys
                165                 170                 175
Val Lys Glu Pro Pro Ala Tyr Thr Phe Arg Asp Tyr Ser Ala Ile Leu
            180                 185                 190
Tyr Leu Asn Gly Asp Phe Asp Gly Gly Asn Phe Tyr Phe Thr Glu Leu
        195                 200                 205
Asp Ala Lys Thr Val Thr Ala Glu Val
    210                 215


<210> 4997
<211> 1888
<212> DNA
<213> Homo sapiens

<400> 4997
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cgccgcgcgg acccgggcgt tctcggcgcc cagcttttga gctcgcgtcc ccaggccggc
120
ggggggggag gggaagagag gggaccctgg gaccccccgcc cccccaccc ggccgcccct
180
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                                    4169

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gccccccggg acccggagaa gatgtcttcg cggacggtgc tggccccggg caacgatcgg
240
aactcggaca cgcatggcac cttgggcagt ggccgctcct cggacaaagg cccgtcctgg
300
tccagccgct cactgggtgc ccgttgccgg aactccatcg cctcctgtcc cgaggagcag
360
ccccacgtgg gcaactaccg cctgctgagg accattggga agggcaactt tgccaaagtc
420
aagctggctc ggcacatcct cactggtcgg gaggttgcca tcaagattat cgacaaaacc
480
cagctgaatc ccagcagcct gcagaagctg ttccgagaag tccgcatcat gaagggccta
540
aaccacccca acatcgtgaa gctctttgag gtgattgaga ctgagaagac gctgtacctg
600
gtgatggagt acgcaagtgc tggtgagccg cccaccctct ccgccctgcc cctgtgccac
660
ctccccctgc cgctgcacct gaccctgacc ccgctcggcc tctgccctgc aggagaagtg
720
tttgactacc tcgtgtcgca tggccgcatg aaggagaagg aagctcgagc caagttccga
780
cagattgttt cggctgtgca ctattgtcac cagaaaaata ttgtacacag ggacctgaag
840
gctgagaacc tcttgctgga tgccgaggcc aacatcaaga ttgctgactt tggcttcagc
900
aacgagttca cgctgggatc gaagctggac acgttctgcg ggagccccccc atatgccgcc
960
ccggagctgt ttcagggcaa gaagtacgac gggccggagg tggacatctg gagcctggga
1020
gtcatcctgt acaccctcgt cagcggctcc ctgcccttcg acggcacaa cctcaaggag
1080
ctgcgggagc gagtactcaa agggaagtac cgggtccctt tctacatgtc aacagactgt
1140
gagagcatcc tgcggagatt tttggtgctg aacccagcta aacgctgtac tctcgagcaa
1200
atcatgaaag acaaatggat caacatcggc tatgagggtg aggagttgaa gccatacaca
1260
gagcccgagg aggacttcgg ggacaccaag agaattgagg tgatggtggg tatgggctac
1320
acacgggaag aaatcaaaga gtccttgacc agccagaagt acaacgaagt gaccgccacc
1380
tacctcctgc tgggcaggaa gactgagccc gacgagcacg ggggaggcgg agctgaagga
1440
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1500
gccccctcc agccccatgg tcagcagcgc ccacaacccc aacaaggcag agatcccaga
1560
gcggcggaag gacagcacga gcaccccgt gagtgaccag ggctggggggg cagggctggg
1620
ggcgccacct gggccacatt cctcaggccc tgccttcatc tcattcccca gacggaactc
1680
cttcttacca actccttctt ctacccattc attcattcaa caaacattta tcgagtgcct
1740
ctgtttgcct gagctcagtt tatacactaa catttgatgt tagcgtataa attagtgttc
1800
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1860
gcttttaaaa atgtgggaaa ggccaggc
1888

<210> 4998
<211> 464
<212> PRT
<213> Homo sapiens

<400> 4998
Met Ser Ser Arg Thr Val Leu Ala Pro Gly Asn Asp Arg Asn Ser Asp
  1   5   10   15
Thr His Gly Thr Leu Gly Ser Gly Arg Ser Ser Asp Lys Gly Pro Ser
             20   25   30
Trp Ser Ser Arg Ser Leu Gly Ala Arg Cys Arg Asn Ser Ile Ala Ser
         35   40   45
Cys Pro Glu Glu Gln Pro His Val Gly Asn Tyr Arg Leu Leu Arg Thr
     50   55   60
Ile Gly Lys Gly Asn Phe Ala Lys Val Lys Leu Ala Arg His Ile Leu
65   70   75   80
Thr Gly Arg Glu Val Ala Ile Lys Ile Ile Asp Lys Thr Gln Leu Asn
                 85   90   95
Pro Ser Ser Leu Gln Lys Leu Phe Arg Glu Val Arg Ile Met Lys Gly
             100   105   110
Leu Asn His Pro Asn Ile Val Lys Leu Phe Glu Val Ile Glu Thr Glu
             115   120   125
Lys Thr Leu Tyr Leu Val Met Glu Tyr Ala Ser Ala Gly Glu Pro Pro
     130   135   140
Thr Leu Ser Ala Leu Pro Leu Cys His Leu Pro Leu Pro Leu His Leu
145   150   155   160
Thr Leu Thr Pro Leu Gly Leu Cys Pro Ala Gly Glu Val Phe Asp Tyr
                 165   170   175
Leu Val Ser His Gly Arg Met Lys Glu Lys Glu Ala Arg Ala Lys Phe
             180   185   190
Arg Gln Ile Val Ser Ala Val His Tyr Cys His Gln Lys Asn Ile Val
             195   200   205
His Arg Asp Leu Lys Ala Glu Asn Leu Leu Leu Asp Ala Glu Ala Asn
     210   215   220
Ile Lys Ile Ala Asp Phe Gly Phe Ser Asn Glu Phe Thr Leu Gly Ser
225   230   235   240
Lys Leu Asp Thr Phe Cys Gly Ser Pro Pro Tyr Ala Ala Pro Glu Leu
                 245   250   255
Phe Gln Gly Lys Lys Tyr Asp Gly Pro Glu Val Asp Ile Trp Ser Leu
             260   265   270
Gly Val Ile Leu Tyr Thr Leu Val Ser Gly Ser Leu Pro Phe Asp Gly
         275   280   285
His Asn Leu Lys Glu Leu Arg Glu Arg Val Leu Lys Gly Lys Tyr Arg
     290   295   300
Val Pro Phe Tyr Met Ser Thr Asp Cys Glu Ser Ile Leu Arg Arg Phe
305   310   315   320
Leu Val Leu Asn Pro Ala Lys Arg Cys Thr Leu Glu Gln Ile Met Lys
                 325   330   335
Asp Lys Trp Ile Asn Ile Gly Tyr Glu Gly Glu Glu Leu Lys Pro Tyr

                                4171

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              340                   345                   350
Thr Glu Pro Glu Glu Asp Phe Gly Asp Thr Lys Arg Ile Glu Val Met
          355                   360                   365
Val Gly Met Gly Tyr Thr Arg Glu Glu Ile Lys Glu Ser Leu Thr Ser
      370                   375                   380
Gln Lys Tyr Asn Glu Val Thr Ala Thr Tyr Leu Leu Leu Gly Arg Lys
385                   390                   395                   400
Thr Glu Pro Asp Glu His Gly Gly Gly Gly Ala Glu Gly Gly Ala Ala
              405                   410                   415
Ala Arg Pro Glu Gly Glu Leu Gln His Arg Gly Glu Trp Glu Ser Arg
          420                   425                   430
Ala Ala Pro Leu Gln Pro His Gly Gln Gln Arg Pro Gln Pro Gln Gln
          435                   440                   445
Gly Arg Asp Pro Arg Ala Ala Glu Gly Gln His Glu His Pro Arg Glu
      450                   455                   460
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<210> 4999
<211> 1630
<212> DNA
<213> Homo sapiens

<400> 4999
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gccgcagtcc gcggcggcga cgaggtgagg cgcgtccgcg agagcaacgt cctccacgag
120
aagtccaagg ggaagacgcg cgagggagcc gaggacaaga tgaccagcgg cgacgtgctg
180
tccaaccgca agatgttcta cctgctcaag accgccttcc ccagcgtcca gattaatact
240
gaggaacacg tggatgcagc tgatcaggag gttatcttgt gggatcataa gattcctgag
300
gatatcctaa aggaagtaac tactcctaaa gaggtaccag cagaaagtgt tactgtctgg
360
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420
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480
gaatatacag cttgggcaat ggtagatggt ggttcaaatg tgaaagcccg ctcttcctac
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600
gctcttcaga cttttggaaa ccagactaca attatcccag ctggtggtgc tggttataaa
660
gttttagcac ttttggatgt gcctgataag agtcaagaaa agctgatttt atacatccat
720
gtgacataca tcaaaaagtg ggatatatgt gctggtaatg ccatcttaaa agccctaggg
780
gggcatatga ctaccctgag tggtgaagaa atcagttaca ctggttcaga cggcattgaa
840
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900
ctagaaaaga caggacataa atgagcataa ctgattacag ggtacagttc ttcacagctg
960
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aaatggttag cctgagatgc tggaagcttc aaaggattgg tggagactat gcatggttaa
1020
ggccatcccg aacttttaa agtatttatg aagcatcaga gacttatttt ccctgtaata
1080
gaatgcaaaa tcagggaaaa tgggttgctt tgtgtctcaa gtattgtctt tatttttgag
1140
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1260
tagtactttc atatagaatt cggttgaagg aaagattgat ttttgtgtag atgtttaata
1320
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1380
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1440
ctgaatattt ctatggatta aaatagaaaa agtttaattg attttttctt ttaaatttta
1500
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1620
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1630


<210> 5000
<211> 307
<212> PRT
<213> Homo sapiens

<400> 5000
Ala Ala Ala Ala Asp Gly Gly Thr Val Asp Leu Arg Glu Met Leu Ala
1               5                  10                  15
Val Ser Val Leu Ala Ala Val Arg Gly Gly Asp Glu Val Arg Arg Val
            20                  25                  30
Arg Glu Ser Asn Val Leu His Glu Lys Ser Lys Gly Lys Thr Arg Glu
        35                  40                  45
Gly Ala Glu Asp Lys Met Thr Ser Gly Asp Val Leu Ser Asn Arg Lys
    50                  55                  60
Met Phe Tyr Leu Leu Lys Thr Ala Phe Pro Ser Val Gln Ile Asn Thr
65                  70                  75                  80
Glu Glu His Val Asp Ala Ala Asp Gln Glu Val Ile Leu Trp Asp His
                85                  90                  95
Lys Ile Pro Glu Asp Ile Leu Lys Glu Val Thr Thr Pro Lys Glu Val
            100                 105                 110
Pro Ala Glu Ser Val Thr Val Trp Ile Asp Pro Leu Asp Ala Thr Gln
        115                 120                 125
Glu Tyr Thr Glu Asp Leu Arg Lys Tyr Val Thr Thr Met Val Cys Val
    130                 135                 140
Ala Val Asn Gly Lys Pro Met Leu Gly Val Ile His Lys Pro Phe Ser
145                 150                 155                 160
Glu Tyr Thr Ala Trp Ala Met Val Asp Gly Gly Ser Asn Val Lys Ala
                165                 170                 175
Arg Ser Ser Tyr Asn Glu Lys Thr Pro Arg Ile Val Val Ser Arg Ser
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                 180                  185                  190
His Ser Gly Met Val Lys Gln Val Ala Leu Gln Thr Phe Gly Asn Gln
            195                  200                  205
Thr Thr Ile Ile Pro Ala Gly Gly Ala Gly Tyr Lys Val Leu Ala Leu
        210                  215                  220
Leu Asp Val Pro Asp Lys Ser Gln Glu Lys Ala Asp Leu Tyr Ile His
225                  230                  235                  240
Val Thr Tyr Ile Lys Lys Trp Asp Ile Cys Ala Gly Asn Ala Ile Leu
                245                  250                  255
Lys Ala Leu Gly Gly His Met Thr Thr Leu Ser Gly Glu Glu Ile Ser
            260                  265                  270
Tyr Thr Gly Ser Asp Gly Ile Glu Gly Gly Leu Leu Ala Ser Ile Arg
            275                  280                  285
Met Asn His Gln Ala Leu Val Arg Lys Leu Pro Asp Leu Glu Lys Thr
        290                  295                  300
Gly His Lys
305
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<210> 5001
<211> 3427
<212> DNA
<213> Homo sapiens

<400> 5001
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atctacctcg tgtatttttc tctttcactc atgagctgca caattgcaga tttgagcaca
120
atgtctgcag actgtgttga aaaactctga agaacctaat taacacagga tgacctagga
180
gtgattctaa gtctgtgtaa caagatatta ctcattagtg aatgtgtcag tcttggtact
240
gaatgctgca gataacagca agtaggttct cctttatttc tgaagtattc acttgacctt
300
ccatcagtaa gacggacttt tctaatctgt tcctggagat attaatggaa tacagtcatg
360
tccactcaag acgagaggca gatcaatact gaatatgctg tgtcattgtt ggaacagttg
420
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480
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540
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600
ttacagataa taataactta tgcatacacg ggtaacttgg caatgaatga cagcactgta
660
gaacagcttt atgaaacagc ttgcttccta caggtagaag atgtgttaca acgttgtcga
720
gaatatttaa ttaaaaaaat aaatgcagag aattgtgtac gattgttgag ttttgctgat
780
ctcttcagtt gtgaggaatt aaaacagagt gctaaaagaa tggtggagca caagttcact
840
gctgtgtatc atcaggacgc gttcatgcag ctgttacatg acctactgat agatattctc
900
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960
ctagagtata acacagaatc acgatcccag tatttgtctt ctgttcttag ccaaatcaga
1020
attgatgcac tttcagaagt aacacagaga gcttggtttc aaggtctgcc acccaatgat
1080
aagtcagtgg tggttcaagg tctgtataag tccatgccca agtttttcaa accaagactt
1140
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2100
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2160
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2220
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2340
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2400
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2460
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2520

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2580
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2640
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2700
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2760
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2820
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3060
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3240
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3300
acaggtgctt catgacaaac attactagca tgttcaactg caccatgttc tggcactgta
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aaaaaaa
3427

<210> 5002
<211> 335
<212> PRT
<213> Homo sapiens

<400> 5002
Met Ser Thr Gln Asp Glu Arg Gln Ile Asn Thr Glu Tyr Ala Val Ser
1   5   10   15
Leu Leu Glu Gln Leu Lys Leu Phe Tyr Glu Gln Gln Leu Phe Thr Asp
                20   25   30
Ile Val Leu Ile Val Glu Gly Thr Glu Phe Pro Cys His Lys Met Val
        35   40   45
Leu Ala Thr Cys Ser Ser Tyr Phe Arg Ala Met Phe Met Ser Gly Leu
    50   55   60
Ser Glu Ser Lys Gln Thr His Val His Leu Arg Asn Val Asp Ala Ala
65   70   75   80
Thr Leu Gln Ile Ile Ile Thr Tyr Ala Tyr Thr Gly Asn Leu Ala Met
                85   90   95
Asn Asp Ser Thr Val Glu Gln Leu Tyr Glu Thr Ala Cys Phe Leu Gln
            100   105   110
Val Glu Asp Val Leu Gln Arg Cys Arg Glu Tyr Leu Ile Lys Lys Ile

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         115                    120                    125
Asn Ala Glu Asn Cys Val Arg Leu Leu Ser Phe Ala Asp Leu Phe Ser
     130                    135                    140
Cys Glu Glu Leu Lys Gln Ser Ala Lys Arg Met Val Glu His Lys Phe
145                    150                    155                    160
Thr Ala Val Tyr His Gln Asp Ala Phe Met Gln Leu Leu His Asp Leu
                 165                    170                    175
Leu Ile Asp Ile Leu Ser Ser Asp Asn Leu Asn Val Glu Lys Glu Glu
                      180                    185                    190
Thr Val Arg Glu Ala Ala Met Leu Trp Leu Glu Tyr Asn Thr Glu Ser
                 195                    200                    205
Arg Ser Gln Tyr Leu Ser Ser Val Leu Ser Gln Ile Arg Ile Asp Ala
     210                    215                    220
Leu Ser Glu Val Thr Gln Arg Ala Trp Phe Gln Gly Leu Pro Pro Asn
225                    230                    235                    240
Asp Lys Ser Val Val Val Gln Gly Leu Tyr Lys Ser Met Pro Lys Phe
                 245                    250                    255
Phe Lys Pro Arg Leu Gly Met Thr Lys Glu Glu Met Met Ile Phe Ile
                 260                    265                    270
Glu Ala Ser Ser Glu Asn Pro Cys Ser Leu Tyr Ser Ser Val Cys Tyr
     275                    280                    285
Ser Pro Gln Ala Glu Lys Val Tyr Lys Leu Cys Ser Pro Pro Ala Asp
     290                    295                    300
Leu His Lys Val Gly Thr Val Val Thr Pro Asp Asn Asp Ile Tyr Ile
305                    310                    315                    320
Ala Gly Gly Gln Val Pro Leu Xaa Lys His Lys Asn Lys Ser Gln
                 325                    330                    335
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<210> 5003
<211> 3729
<212> DNA
<213> Homo sapiens

<400> 5003

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180
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240
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300
gacctcagca cgtgcaatga cctcatcgcc aagcatggcg ctgccctcca gcgctccctg
360
aatgagctgg acggcctcaa gatcccatct gagagtgggg agaagctgaa ggtggtgaat
420
gagcgggcca ccctcttccg catcacatcc aatgctatga tcaacgcctg cagggacttc
480
ttggaactag cagagataca cagtcggaaa tggcagcggg cactgcagta tgagcaggag
540
cagcgcgtgc acttggagga aaccattgag cagctggcga agcagcacaa cagcctcgag
600
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cgggccttcc acagtgcccc tggccggccg gccaacccct ccaagagctt cattgaggga
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720
gccatggaag actccacatc cttcatcacc gtgatcaccg aggccaagga agacagcaga
780
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1980
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2100
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2220
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2340
cccttcctat ttcctttcct attttttttt ctccccacac tttcttggga ctcccacctt
2400
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2460
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2520
cggctggccc gggccatggg ctgcgcaaat caccagcccc caacccaggg aggaactggc
2580
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3600
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3729
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<210> 5004

<211> 642
<212> PRT
<213> Homo sapiens

<400> 5004
Ser Ser Thr Asp Asp Ser Gly Asp Asp Asp Glu Ala Thr Thr Pro Ala
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Asp Lys Ser Glu Leu His His Thr Leu Lys Asn Leu Ser Leu Lys Leu
            20   25   30
Asp Asp Leu Ser Thr Cys Asn Asp Leu Ile Ala Lys His Gly Ala Ala
        35   40   45
Leu Gln Arg Ser Leu Asn Glu Leu Asp Gly Leu Lys Ile Pro Ser Glu
    50   55   60
Ser Gly Glu Lys Leu Lys Val Val Asn Glu Arg Ala Thr Leu Phe Arg
65   70   75   80
Ile Thr Ser Asn Ala Met Ile Asn Ala Cys Arg Asp Phe Leu Glu Leu
                85   90   95
Ala Glu Ile His Ser Arg Lys Trp Gln Arg Ala Leu Gln Tyr Glu Gln
                100   105   110
Glu Gln Arg Val His Leu Glu Glu Thr Ile Glu Gln Leu Ala Lys Gln
        115   120   125
His Asn Ser Leu Glu Arg Ala Phe His Ser Ala Pro Gly Arg Pro Ala
    130   135   140
Asn Pro Ser Lys Ser Phe Ile Glu Gly Ser Leu Leu Thr Pro Lys Gly
145   150   155   160
Glu Asp Ser Glu Glu Asp Glu Asp Thr Glu Tyr Phe Asp Ala Met Glu
                165   170   175
Asp Ser Thr Ser Phe Ile Thr Val Ile Thr Glu Ala Lys Glu Asp Ser
            180   185   190
Arg Lys Ala Glu Gly Ser Thr Gly Thr Ser Ser Val Asp Trp Ser Ser
        195   200   205
Ala Asp Asn Val Leu Asp Gly Ala Ser Leu Val Pro Lys Gly Ser Ser
    210   215   220
Lys Val Lys Arg Arg Val Arg Ile Pro Asn Lys Pro Asn Tyr Ser Leu
225   230   235   240
Asn Leu Trp Ser Ile Met Lys Asn Cys Ile Gly Arg Glu Leu Ser Arg
                245   250   255
Ile Pro Met Pro Val Asn Phe Asn Glu Pro Leu Ser Met Leu Gln Arg
                260   265   270
Leu Thr Glu Asp Leu Glu Tyr His His Leu Leu Asp Lys Ala Val His
        275   280   285
Cys Thr Ser Ser Val Glu Gln Met Cys Leu Val Ala Ala Phe Ser Val
    290   295   300
Ser Ser Tyr Ser Thr Thr Val His Arg Ile Ala Lys Pro Phe Asn Pro
305   310   315   320
Met Leu Gly Glu Thr Phe Glu Leu Asp Arg Leu Asp Asp Met Gly Leu
                325   330   335
Arg Ser Leu Cys Glu Gln Val Ser His His Pro Pro Ser Ala Ala His
            340   345   350
Tyr Val Phe Ser Lys His Gly Trp Ser Leu Trp Gln Glu Ile Thr Ile
        355   360   365
Ser Ser Lys Phe Arg Gly Lys Tyr Ile Ser Ile Met Pro Leu Gly Ala
    370   375   380
Ile His Leu Glu Phe Gln Ala Ser Gly Asn His Tyr Val Trp Arg Lys

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385                     390                     395                     400
Ser Thr Ser Thr Val His Asn Ile Ile Val Gly Lys Leu Trp Ile Asp
                405                     410                     415
Gln Ser Gly Asp Ile Glu Ile Val Asn His Lys Thr Asn Asp Arg Cys
            420                     425                     430
Gln Leu Lys Phe Leu Pro Tyr Ser Tyr Phe Ser Lys Glu Ala Ala Arg
        435                     440                     445
Lys Val Thr Gly Val Val Ser Asp Ser Gln Gly Lys Ala His Tyr Val
        450                     455                     460
Leu Ser Gly Ser Trp Asp Glu Gln Met Glu Cys Ser Lys Val Met His
465                     470                     475                     480
Ser Ser Pro Ser Ser Pro Ser Ser Asp Gly Lys Gln Lys Thr Val Tyr
                485                     490                     495
Gln Thr Leu Ser Ala Lys Leu Leu Trp Lys Lys Tyr Pro Leu Pro Glu
            500                     505                     510
Asn Ala Glu Asn Met Tyr Tyr Phe Ser Glu Leu Ala Leu Thr Leu Asn
            515                     520                     525
Glu His Glu Glu Gly Val Ala Pro Thr Asp Ser Arg Leu Arg Pro Asp
        530                     535                     540
Gln Arg Leu Met Glu Lys Gly Arg Trp Asp Glu Ala Asn Thr Glu Lys
545                     550                     555                     560
Gln Arg Leu Glu Glu Lys Gln Arg Leu Ser Arg Arg Arg Arg Leu Glu
                565                     570                     575
Ala Cys Gly Pro Gly Ser Ser Cys Ser Ser Glu Glu Gly Glu Ala Gly
            580                     585                     590
Arg Glu Gly Arg Pro Gly Gly Glu Glu Arg Gly Ala Arg Val Gly Val
        595                     600                     605
Pro Gln Gly Arg Ile Pro Gly Glu Gln Ala Thr Ser Pro Pro Thr Ser
    610                     615                     620
Pro Leu Cys Leu Pro Ser Arg Glu Gly Gly Gly Cys Leu His Ala Thr
625                     630                     635                     640
Val Val
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<210> 5005
<211> 1120
<212> DNA
<213> Homo sapiens

<400> 5005
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120
ggtaatggcg gcggcggtgg cggcgacggt ccagacccca tcccctctgt agccggagcc
180
gagacagccg acagcgaact ccgcggcctc ggagccggcg gcagcggcga ctcccctcag
240
cctccgccgc ctcgcccgcc ggtaccccgg cgccaacccc gggagtcagg ccctttgggc
300
agggagctc ggaggctcag gatggcggat ttcgacgaaa tctatgagga agaggaggac
360
gaggagcggg ccctggagga gcagctgctc aagtactcgc cggacccggt ggtcgtccgc
420
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ggctccggtc acgtcaccgt atttggactg agcaacaaat ttgaatctga attcccttct
480
tcattaactg gaaaagtagc tcctgaagaa tttaaagcca gcatcaacag agttaacagt
540
tgtcttaaga agaaccttcc tgttaatgta cgttggctac tttgtggctg cctttgttgc
600
tgctgcacat taggttgcag tatgtggcca gttatttgcc tcagtaaaag aacacgaaga
660
tcgattgaga agttattaga atgggaaaac aataggttat accacaagct gtgcttgcat
720
tggagactga gcaaaggaa atgtgaaacg aataacatga tggaatatgt catcctcata
780
gaattttac caaagacacc gattttttcga ccagattagc atttacttta tttatagaga
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ctttccaagt atgttgtctt tccaatggtg ccttgcttgg tgctctcctg gtggtgacat
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aacattggtt ctacagaatc gtgtggtgtt ttttttgttt ttgtttttt ttttttttta
960
aataaccgca tgttctaagt gtgcattttt gtcaatcttt gcaacagtta tttcatacag
1020
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1120

<210> 5006
<211> 165
<212> PRT
<213> Homo sapiens

<400> 5006
Met Ala Asp Phe Asp Glu Ile Tyr Glu Glu Glu Glu Asp Glu Glu Arg
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Ala Leu Glu Glu Gln Leu Leu Lys Tyr Ser Pro Asp Pro Val Val Val
             20   25   30
Arg Gly Ser Gly His Val Thr Val Phe Gly Leu Ser Asn Lys Phe Glu
         35   40   45
Ser Glu Phe Pro Ser Ser Leu Thr Gly Lys Val Ala Pro Glu Glu Phe
     50   55   60
Lys Ala Ser Ile Asn Arg Val Asn Ser Cys Leu Lys Lys Asn Leu Pro
65   70   75   80
Val Asn Val Arg Trp Leu Leu Cys Gly Cys Leu Cys Cys Cys Cys Thr
                 85   90   95
Leu Gly Cys Ser Met Trp Pro Val Ile Cys Leu Ser Lys Arg Thr Arg
                 100   105   110
Arg Ser Ile Glu Lys Leu Leu Glu Trp Glu Asn Asn Arg Leu Tyr His
             115   120   125
Lys Leu Cys Leu His Trp Arg Leu Ser Lys Arg Lys Cys Glu Thr Asn
         130   135   140
Asn Met Met Glu Tyr Val Ile Leu Ile Glu Phe Leu Pro Lys Thr Pro
145   150   155   160
Ile Phe Arg Pro Asp
                 165

<210> 5007
<211> 2165
<212> DNA
<213> Homo sapiens

<400> 5007
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120
aacggagatt tatctgaggc tgccatgtgt tacatccata ttgctgccct cattgcagag
180
tatctgaaaa gaaagggcat gttctctatg ggatggccag ctgttttgag cattacacca
240
aacattaagg aagaaggagc gatgaaagag gattctggaa tgcaagatac accatacaat
300
gagaatatcc tggtggagca gctatacatg tgtgtggagt ttctctggaa gtctgagcga
360
tatgaannct cattgctgat gtcaacaagc ccatcattgc tgtctttgag aaacaacgag
420·
acttcaaaaa attcagatct ctactacgac attcatcggt catatctgaa agtggcagag
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540
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600
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660
aagataatcc aggattccaa caaggtaaac cccaaggatt tggaccccaa atatgcctac
720
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1020
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1080
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1140
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1200
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1260
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1320
gagcagctct gtcgaggtcc gtgtttatac agcttctgtt cctctgtgtc tagtatttcc
1380
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1440

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1620
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1680
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1740
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1920
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2165
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<210> 5008
<211> 487
<212> PRT
<213> Homo sapiens

<400> 5008
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1               5                   10                  15
Gly Asn Ser Tyr Ala Ser Thr Pro Glu Leu Arg Arg Thr Arg Leu Glu
            20                  25                  30
Ser Met Ala Lys Ile His Ala Arg Asn Gly Asp Leu Ser Glu Ala Ala
        35                  40                  45
Met Cys Tyr Ile His Ile Ala Ala Leu Ile Ala Glu Tyr Leu Lys Arg
    50                  55                  60
Lys Gly Met Phe Ser Met Gly Trp Pro Ala Val Leu Ser Ile Thr Pro
65                  70                  75                  80
Asn Ile Lys Glu Glu Gly Ala Met Lys Glu Asp Ser Gly Met Gln Asp
                85                  90                  95
Thr Pro Tyr Asn Glu Asn Ile Leu Val Glu Gln Leu Tyr Met Cys Val
            100                 105                 110
Glu Phe Leu Trp Lys Ser Glu Arg Tyr Glu Xaa Ser Leu Leu Met Ser
        115                 120                 125
Thr Ser Pro Ser Leu Leu Ser Leu Arg Asn Asn Glu Thr Ser Lys Asn
    130                 135                 140
Ser Asp Leu Tyr Tyr Asp Ile His Arg Ser Tyr Leu Lys Val Ala Glu
145                 150                 155                 160
Val Val Asn Ser Glu Ala Ala Val Trp Ser Leu Leu Ser Cys Gly Ile
```

```
                 165                      170                      175
Tyr Gly Gln Gly Phe Phe Glu Glu Glu Gly Lys Glu Tyr Ile Tyr
             180                      185                      190
Lys Glu Pro Lys Leu Thr Gly Leu Ser Glu Ile Ser Gln Arg Leu Leu
         195                      200                      205
Lys Leu Tyr Ala Asp Lys Phe Gly Ala Asp Asn Val Lys Ile Ile Gln
         210                      215                      220
Asp Ser Asn Lys Val Asn Pro Lys Asp Leu Asp Pro Lys Tyr Ala Tyr
225                      230                      235                      240
Ile Gln Val Thr Tyr Val Thr Pro Phe Phe Glu Glu Lys Glu Ile Glu
                 245                      250                      255
Asp Arg Lys Thr Asp Phe Glu Met His His Asn Ile Asn Arg Phe Val
             260                      265                      270
Phe Glu Thr Pro Phe Thr Leu Ser Gly Lys Lys His Gly Gly Val Ala
         275                      280                      285
Glu Gln Cys Lys Arg Arg Thr Ile Leu Thr Thr Ser His Leu Phe Pro
         290                      295                      300
Tyr Val Lys Lys Arg Ile Gln Val Ile Ser Gln Ser Ser Thr Glu Leu
305                      310                      315                      320
Asn Pro Ile Glu Val Ala Ile Asp Glu Met Ser Lys Lys Val Ser Glu
                 325                      330                      335
Leu Asn Gln Leu Cys Thr Met Glu Glu Val Asp Met Ile Arg Leu Gln
             340                      345                      350
Leu Lys Leu Gln Gly Ser Val Ser Val Lys Val Asn Ala Gly Pro Met
         355                      360                      365
Ala Tyr Ala Arg Ala Phe Leu Glu Glu Thr Asn Ala Lys Lys Tyr Pro
         370                      375                      380
Asp Asn Gln Val Lys Leu Leu Lys Glu Ile Phe Arg Gln Phe Ala Asp
385                      390                      395                      400
Ala Cys Gly Gln Ala Leu Asp Val Asn Glu Arg Leu Ile Lys Glu Asp
                 405                      410                      415
Gln Leu Glu Tyr Gln Glu Glu Leu Arg Ser His Tyr Lys Asp Met Leu
             420                      425                      430
Ser Glu Leu Ser Thr Val Met Asn Glu Gln Leu Cys Arg Gly Pro Cys
         435                      440                      445
Leu Tyr Ser Phe Cys Ser Ser Val Ser Ser Ile Ser Leu Ser Thr Val
         450                      455                      460
Ser Lys Ser Asp Tyr Gly Gln Gly Arg Pro Val Lys Ala Arg Ser Gly
465                      470                      475                      480
Pro Asn Leu His Ser Ser Asn
                 485
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<210> 5009
<211> 426
<212> DNA
<213> Homo sapiens

<400> 5009
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120
ccttggagat gtcagcaaag catggcgagg agagcagctt ctcctctgtc ccaaagggaa
180
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gcagaagatt aggagctaga tcaagcaaga ctgggggctg caggtgtagg aagtgaatca
240
agatgacttc aaaagagaga ataaaaagtg ggcttatgaa gaattggtgg actcttcctg
300
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<210> 5010
<211> 119
<212> PRT
<213> Homo sapiens

<400> 5010

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Ser	Tyr	Ala	Cys	Phe	Phe	Phe	Leu	Ser	Pro	Ser	Leu	Leu	Phe	Leu	Pro
			20				25					30			
Asn	Leu	Pro	Gly	Arg	Val	His	Gln	Phe	Phe	Ile	Ser	Pro	Leu	Phe	Ile
		35				40					45				
Leu	Ser	Phe	Glu	Val	Ile	Leu	Ile	His	Phe	Leu	His	Leu	Gln	Pro	Pro
	50				55					60					
Val	Leu	Leu	Asp	Leu	Ala	Pro	Asn	Leu	Leu	Leu	Pro	Phe	Gly	Thr	Glu
65				70				75						80	
Glu	Lys	Leu	Leu	Ser	Ser	Pro	Cys	Phe	Ala	Asp	Ile	Ser	Lys	Gly	Lys
			85				90					95			
Glu	Ser	Thr	Gly	Pro	Phe	Ile	Ser	Cys	Pro	Arg	Pro	Ser	Gln	Gly	Ala
			100				105				110				
Val	Ile	Met	Pro	Lys	Pro	Tyr									
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<210> 5011
<211> 3431
<212> DNA
<213> Homo sapiens

<400> 5011

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120
atagtcaact gcgtggaaga gaagccaaaa gaatgcaatg gtgtaaagat tccagttgat
180
gccagtaaac ctaatccaaa tgatgtggag tttgataatc tgtatttgga tatgaatgga
240
atcatccatc cctgtactca tcctgaagac aaaccagcac caaaaaatga agatgaaatg
300
atggttgcaa tttttgagta cattgacaga cttttcagta ttgtaagacc aagaagactt
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ctctacatgg caatagatgg agtggcacca cgtgtaaaaa tgaaccagca gcgttcaagg
420
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```
aggttcaggg ccatcaaaga aggaatggaa gcagcagtcg agaagcagcg agtcagggaa
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aactgtatta caccaggaac tgaattcatg gacaatcttg ctaaatgcct tcgctattac
600
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660
gctagtgctc ctggtgaagg agaacataaa atcatggatt acattagaag gcaaagagcc
720
cagcctaacc atgacccaaa tactcatcat tgtttatgtg gagcagatgc tgatctcatt
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840
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900
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1380
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1440
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1920
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1980
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2040
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```
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gagctgtacc  agacaggttc  cacagagcca  gtggaggtac  cccctgaact  atgtcatggg
2220
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cctgttccta  tgttaaggga  tctgacacag  aacactgtag  tcagtattaa  ttttaaagac
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3431
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<210> 5012
<211> 950
<212> PRT
<213> Homo sapiens
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<400> 5012
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            20                  25                  30
Lys Ile Pro Val Asp Ala Ser Lys Pro Asn Pro Asn Asp Val Glu Phe
            35                  40                  45
Asp Asn Leu Tyr Leu Asp Met Asn Gly Ile Ile His Pro Cys Thr His
    50                  55                  60
Pro Glu Asp Lys Pro Ala Pro Lys Asn Glu Asp Glu Met Met Val Ala
65                  70                  75                  80
Ile Phe Glu Tyr Ile Asp Arg Leu Phe Ser Ile Val Arg Pro Arg Arg
                85                  90                  95
Leu Leu Tyr Met Ala Ile Asp Gly Val Ala Pro Arg Val Lys Met Asn
            100                 105                 110
Gln Gln Arg Ser Arg Arg Phe Arg Ala Ile Lys Glu Gly Met Glu Ala
        115                 120                 125
Ala Val Glu Lys Gln Arg Val Arg Glu Glu Ile Leu Ala Lys Gly Gly
    130                 135                 140
Phe Leu Pro Pro Glu Glu Ile Lys Glu Arg Phe Asp Ser Asn Cys Ile
145                 150                 155                 160
Thr Pro Gly Thr Glu Phe Met Asp Asn Leu Ala Lys Cys Leu Arg Tyr
                165                 170                 175
Tyr Ile Ala Asp Arg Leu Asn Asn Asp Pro Gly Trp Lys Asn Leu Thr
            180                 185                 190
Val Ile Leu Ser Asp Ala Ser Ala Pro Gly Glu Gly Glu His Lys Ile
        195                 200                 205
Met Asp Tyr Ile Arg Arg Gln Arg Ala Gln Pro Asn His Asp Pro Asn
    210                 215                 220
Thr His His Cys Leu Cys Gly Ala Asp Ala Asp Leu Ile Met Leu Gly
225                 230                 235                 240
Leu Ala Thr His Glu Pro Asn Phe Thr Ile Ile Arg Glu Glu Phe Lys
                245                 250                 255
Pro Asn Lys Pro Lys Pro Cys Gly Leu Cys Asn Gln Phe Gly His Glu
                260                 265                 270
Val Lys Asp Cys Glu Gly Leu Pro Arg Glu Lys Lys Gly Lys His Asp
        275                 280                 285
Glu Leu Ala Asp Ser Leu Pro Cys Ala Glu Gly Glu Phe Ile Phe Leu
    290                 295                 300
Arg Leu Asn Val Leu Arg Glu Tyr Leu Glu Arg Glu Leu Thr Met Ala
305                 310                 315                 320
Ser Leu Pro Phe Thr Phe Asp Val Glu Arg Ser Ile Asp Asp Trp Val
                325                 330                 335
Phe Met Cys Phe Phe Val Gly Asn Asp Phe Leu Pro His Leu Pro Ser
                340                 345                 350
Leu Glu Ile Arg Glu Asn Ala Ile Asp Arg Leu Val Asn Ile Tyr Lys
        355                 360                 365
Asn Val Val His Lys Thr Gly Gly Tyr Leu Thr Glu Ser Gly Tyr Val
    370                 375                 380
Asn Leu Gln Arg Val Gln Met Ile Met Leu Ala Val Gly Glu Val Glu
385                 390                 395                 400
Asp Ser Ile Phe Lys Lys Arg Lys Asp Asp Glu Asp Ser Phe Arg Arg
            405                 410                 415
Arg Gln Lys Glu Lys Arg Lys Arg Met Lys Arg Asp Gln Pro Ala Phe
```

```
                    420                    425                    430
Thr Pro Ser Gly Ile Leu Thr Pro His Ala Leu Gly Ser Arg Asn Ser
            435                    440                    445
Pro Gly Ser Gln Val Ala Ser Asn Pro Arg Gln Ala Ala Tyr Glu Met
        450                    455                    460
Arg Met Gln Asn Asn Ser Ser Pro Ser Ile Ser Pro Asn Thr Ser Phe
465                    470                    475                    480
Thr Ser Asp Gly Ser Pro Ser Pro Leu Gly Gly Ile Lys Arg Lys Ala
                485                    490                    495
Glu Asp Ser Asp Ser Glu Pro Glu Pro Glu Asp Asn Val Arg Leu Trp
            500                    505                    510
Glu Ala Gly Trp Lys Gln Arg Tyr Tyr Lys Asn Lys Phe Asp Val Asp
        515                    520                    525
Ala Ala Asp Glu Lys Phe Arg Arg Lys Val Val Gln Ser Tyr Val Glu
        530                    535                    540
Gly Leu Cys Trp Val Leu Arg Tyr Tyr Tyr Gln Gly Cys Ala Ser Trp
545                    550                    555                    560
Lys Trp Tyr Tyr Pro Phe His Tyr Ala Pro Phe Ala Ser Asp Phe Glu
                565                    570                    575
Gly Ile Ala Asp Met Pro Ser Asp Phe Glu Lys Gly Thr Lys Pro Phe
            580                    585                    590
Lys Pro Leu Glu Gln Leu Met Gly Val Phe Pro Ala Ala Ser Gly Asn
        595                    600                    605
Phe Leu Pro Pro Ser Trp Arg Lys Leu Met Ser Asp Pro Asp Ser Ser
        610                    615                    620
Ile Ile Asp Phe Tyr Pro Glu Asp Phe Ala Ile Asp Leu Asn Gly Lys
625                    630                    635                    640
Lys Tyr Ala Trp Gln Gly Val Ala Leu Leu Pro Phe Val Asp Glu Arg
                645                    650                    655
Arg Leu Arg Ala Ala Leu Glu Glu Val Tyr Pro Asp Leu Thr Pro Glu
            660                    665                    670
Glu Thr Arg Arg Asn Ser Leu Gly Gly Asp Val Leu Phe Val Gly Lys
        675                    680                    685
His His Pro Leu His Asp Phe Ile Leu Glu Leu Tyr Gln Thr Gly Ser
        690                    695                    700
Thr Glu Pro Val Glu Val Pro Pro Glu Leu Cys His Gly Ile Gln Gly
705                    710                    715                    720
Lys Phe Ser Leu Asp Glu Glu Ala Ile Leu Pro Asp Gln Ile Val Cys
                725                    730                    735
Ser Pro Val Pro Met Leu Arg Asp Leu Thr Gln Asn Thr Val Val Ser
            740                    745                    750
Ile Asn Phe Lys Asp Pro Gln Phe Ala Glu Asp Tyr Ile Phe Lys Ala
            755                    760                    765
Val Met Leu Pro Gly Ala Arg Lys Pro Ala Ala Val Leu Lys Pro Ser
        770                    775                    780
Asp Trp Glu Lys Ser Ser Asn Gly Arg Gln Trp Lys Pro Gln Leu Gly
785                    790                    795                    800
Phe Asn Arg Asp Arg Arg Pro Val His Leu Asp Gln Ala Ala Phe Arg
                805                    810                    815
Thr Leu Gly His Val Met Pro Arg Gly Ser Gly Thr Gly Ile Tyr Ser
        820                    825                    830
Asn Ala Ala Pro Pro Pro Val Thr Tyr Gln Gly Asn Leu Tyr Arg Pro
        835                    840                    845
Leu Leu Arg Gly Gln Ala Gln Ile Pro Lys Leu Met Ser Asn Met Arg
```

```
          850                    855                    860
Pro Gln Asp Ser Trp Arg Gly Pro Pro Pro Leu Phe Gln Gln Gln Arg
865                    870                    875                    880
Phe Asp Arg Gly Val Gly Ala Glu Pro Leu Leu Pro Trp Asn Arg Met
                    885                    890                    895
Leu Gln Thr Gln Asn Ala Ala Phe Gln Pro Asn Gln Tyr Gln Met Leu
                900                    905                    910
Ala Gly Pro Gly Gly Tyr Pro Pro Arg Arg Asp Asp Arg Gly Gly Arg
            915                    920                    925
Gln Gly Tyr Pro Arg Glu Gly Arg Lys Tyr Pro Leu Pro Pro Pro Ser
        930                    935                    940
Gly Arg Tyr Asn Trp Asn
945                    950
```

<210> 5013
<211> 2480
<212> DNA
<213> Homo sapiens

<400> 5013
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180
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240
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300
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360
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420
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540
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720
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780
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840
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960
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1020
```

```
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2400
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<210> 5014
<211> 675
<212> PRT
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<213> Homo sapiens

<400> 5014
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            20                  25                  30
Asp Pro Glu Cys Glu Ile Glu Arg Pro Glu Arg Leu Thr Ala Ala Leu
            35                  40                  45
Asp Arg Leu Arg Gln Arg Gly Leu Glu Gln Arg Cys Leu Arg Leu Ser
        50                  55                  60
Ala Arg Glu Ala Ser Glu Glu Glu Leu Gly Leu Val His Ser Pro Glu
65                  70                  75                  80
Tyr Val Ser Leu Val Arg Glu Thr Gln Val Leu Gly Lys Glu Glu Leu
                85                  90                  95
Gln Ala Leu Ser Gly Gln Phe Asp Ala Ile Tyr Phe His Pro Ser Thr
            100                 105                 110
Phe His Cys Ala Arg Leu Ala Ala Gly Ala Gly Leu Gln Leu Val Asp
        115                 120                 125
Ala Val Leu Thr Gly Ala Val Gln Asn Gly Leu Ala Leu Val Arg Pro
        130                 135                 140
Pro Gly His His Gly Gln Arg Ala Ala Ala Asn Gly Phe Cys Val Phe
145                 150                 155                 160
Asn Asn Val Ala Ile Ala Ala Ala His Ala Lys Gln Lys His Gly Leu
                165                 170                 175
His Arg Ile Leu Val Val Asp Trp Asp Val His His Gly Gln Gly Ile
            180                 185                 190
Gln Tyr Leu Phe Glu Asp Asp Pro Ser Val Leu Tyr Phe Ser Trp His
            195                 200                 205
Arg Tyr Glu His Gly Arg Phe Trp Pro Phe Leu Arg Glu Ser Asp Ala
        210                 215                 220
Asp Ala Val Gly Arg Gly Gln Gly Leu Gly Phe Thr Val Asn Leu Pro
225                 230                 235                 240
Trp Asn Gln Val Gly Met Gly Asn Ala Asp Tyr Val Ala Ala Phe Leu
                245                 250                 255
His Leu Leu Leu Pro Leu Ala Phe Glu Phe Asp Pro Glu Leu Val Leu
            260                 265                 270
Val Ser Ala Gly Phe Asp Ser Ala Ile Gly Asp Pro Glu Gly Gln Met
        275                 280                 285
Gln Ala Thr Pro Glu Cys Phe Ala His Leu Thr Gln Leu Leu Gln Val
        290                 295                 300
Leu Ala Gly Gly Arg Val Cys Ala Val Leu Glu Gly Gly Tyr His Leu
305                 310                 315                 320
Glu Ser Leu Ala Glu Ser Val Cys Met Thr Val Gln Thr Leu Leu Gly
                325                 330                 335
Asp Pro Ala Pro Pro Leu Ser Gly Pro Met Ala Pro Cys Gln Arg Cys
            340                 345                 350
Glu Gly Ser Ala Leu Glu Ser Ile Gln Ser Ala Arg Ala Ala Gln Ala
            355                 360                 365
Pro His Trp Lys Ser Leu Gln Gln Gln Asp Val Thr Ala Val Pro Met
        370                 375                 380
Ser Pro Ser Ser His Ser Pro Glu Gly Arg Pro Pro Pro Leu Leu Pro
385                 390                 395                 400
Gly Gly Pro Val Cys Lys Ala Ala Ala Ser Ala Pro Ser Ser Leu Leu
```

```
                    405                    410                     415
Asp Gln Pro Cys Leu Cys Pro Ala Pro Ser Val Arg Thr Ala Val Ala
            420                    425                     430
Leu Thr Thr Pro Asp Ile Thr Leu Val Leu Pro Pro Asp Val Ile Gln
            435                    440                     445
Gln Glu Ala Ser Ala Leu Arg Glu Glu Thr Glu Ala Trp Ala Arg Pro
     450                    455                     460
His Glu Ser Leu Ala Arg Glu Glu Ala Leu Thr Ala Leu Gly Lys Leu
465                 ·    470                    475                480
Leu Tyr Leu Leu Asp Gly Met Leu Asp Gly Gln Val Asn Ser Gly Ile
            485                    490                     495
Ala Ala Thr Pro Ala Ser Ala Ala Ala Ala Thr Leu Asp Val Ala Val
            500                    505                     510
Arg Arg Gly Leu Ser His Gly Ala Gln Arg Leu Leu Cys Val Ala Leu
            515                    520                     525
Gly Gln Leu Asp Arg Pro Pro Asp Leu Ala His Asp Gly Arg Ser Leu
            530                    535                     540
Trp Leu Asn Ile Arg Gly Lys Glu Ala Ala Ala Leu Ser Met Phe His
545                     550                    555                560
Val Ser Thr Pro Leu Pro Val Met Thr Gly Gly Phe Leu Ser Cys Ile
            565                    570                     575
Leu Gly Leu Val Leu Pro Leu Ala Tyr Gly Phe Gln Pro Asp Leu Val
            580                    585                     590
Leu Val Ala Leu Gly Pro Gly His Gly Leu Gln Gly Pro His Ala Ala
            595                    600                     605
Leu Leu Ala Ala Met Leu Arg Gly Leu Ala Gly Gly Arg Val Leu Ala
     610                    615                     620
Leu Leu Glu Glu Val Ser Trp Ala Gly Trp Arg Cys Cys Gly Val Gly
625                     630                    635                640
Arg Gly Glu Gly Pro Val Thr Ala Ser Val Phe Ala Pro Gly Pro Glu
                   645                    650                     655
Leu His Thr Pro Ala Ser Arg Asp Pro Gly Pro Gly Ala Glu Trp Arg
            660                    665                     670
Gly Thr Ser
            675
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<210> 5015
<211> 1360
<212> DNA
<213> Homo sapiens

<400> 5015
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ccgcaggtcc ctcccctctc cgcaggcccc gccgccgccg ccatctttgt tgggggcagc
120
caggcctggc tcgagatgcc gaagtcgtgc gcggcccggc agtgctgcaa ccgctacagc
180
agccgcagga agcagctcac cttccaccgg tttccgttca gccgcccgga gctgctgaag
240
gaatgggtgc tgaacatcgg ccggggcaac ttcaagccca gcagcacac ggtcatctgc
300
tccgagcact ccggccaga gtgcttcagc gcctttggaa accgcaagaa cctaaagcac
360
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```
aatgccgtgc ccacggtgtt cgcctttcag daccccacac agcaggtgag ggagaacaca
420
gaccctgcca gtgagagagg aaatgccagc tcttctcaga aagaaaaggt cctccctgag
480
gcggggggccg gagaggacag tcctgggaga aacatggaca ctgcacttga agagcttcag
540
ttgcccccaa atgccgaagg ccacgtaaaa caggtctcgc cacggaggcc gcaagcaaca
600
gaggctgttg gccggccgac tggccctgca ggcctgagaa ggacccccaa caagcagcca
660
tctgatcaca gctatgccct tttggactta gattccctga agaaaaaact cttcctcact
720
ctgaaggaaa atgaaaagct ccggaagcgc ttgcaggccc agaggctggt gatgcgaagg
780
atgtccagcc gcctccgtgc ttgcaaaggg caccggggac tccaggccag acttgggcca
840
gagcagcaga gctgagcccc acaggctccg gacgcagagg tggcagtggc accagggccg
900
gcagagcttt ggagctctgg ctgtggacat ttttgtctgc tgtggacact gagaaagttg
960
gccatgaggc ctgcttggcc ggggatcgag acagtagcca agctccccgg cgagagcccc
1020
aatgccgtct gggggacgtt tagaggcgtg gcactaggag tgcacatctg tgagcatgac
1080
aagcttatcc tcccatggta acagaagtcc aggctgaggc tgattctgga cgctgtcctt
1140
tcagcacacg cagagcaaag atcgttggaa gccccagtgt gggagatgct cctcagggag
1200
gaagccatgt gagggggctg gctctgtggc gggtgagtgg tcccctcctc catcagcctg
1260
gacagccgct cggggttcta aggagtgact cctgtcccgg cctggtgtga gtgggcagtg
1320
taataaagtg tctttctata cggaaaaaaa aaaaaaaaaa
1360


<210> 5016
<211> 284
<212> PRT
<213> Homo sapiens

<400> 5016
Met Ser Ala Pro Trp Arg Arg Ala Arg Pro Val Thr Thr Ser Gln Arg
 1               5                  10                  15
Pro Arg Pro Ser Pro Gln Val Pro Pro Leu Ser Ala Gly Pro Ala Ala
                20              25                  30
Ala Ala Ile Phe Val Gly Gly Ser Gln Ala Trp Leu Glu Met Pro Lys
             35                  40                  45
Ser Cys Ala Ala Arg Gln Cys Cys Asn Arg Tyr Ser Ser Arg Arg Lys
     50                  55                  60
Gln Leu Thr Phe His Arg Phe Pro Phe Ser Arg Pro Glu Leu Leu Lys
 65                  70                  75                  80
Glu Trp Val Leu Asn Ile Gly Arg Gly Asn Phe Lys Pro Lys Gln His
                 85                  90                  95
Thr Val Ile Cys Ser Glu His Phe Arg Pro Glu Cys Phe Ser Ala Phe
```

```
              100                     105                    110
Gly Asn Arg Lys Asn Leu Lys His Asn Ala Val Pro Thr Val Phe Ala
         115                     120                    125
Phe Gln Asp Pro Thr Gln Gln Val Arg Glu Asn Thr Asp Pro Ala Ser
     130                     135                    140
Glu Arg Gly Asn Ala Ser Ser Ser Gln Lys Glu Lys Val Leu Pro Glu
145                     150                    155                    160
Ala Gly Ala Gly Glu Asp Ser Pro Gly Arg Asn Met Asp Thr Ala Leu
                 165                     170                    175
Glu Glu Leu Gln Leu Pro Pro Asn Ala Glu Gly His Val Lys Gln Val
                 180                     185                    190
Ser Pro Arg Arg Pro Gln Ala Thr Glu Ala Val Gly Arg Pro Thr Gly
         195                     200                    205
Pro Ala Gly Leu Arg Arg Thr Pro Asn Lys Gln Pro Ser Asp His Ser
     210                     215                    220
Tyr Ala Leu Leu Asp Leu Asp Ser Leu Lys Lys Lys Leu Phe Leu Thr
225                     230                    235                    240
Leu Lys Glu Asn Glu Lys Leu Arg Lys Arg Leu Gln Ala Gln Arg Leu
                 245                     250                    255
Val Met Arg Arg Met Ser Ser Arg Leu Arg Ala Cys Lys Gly His Arg
                 260                     265                    270
Gly Leu Gln Ala Arg Leu Gly Pro Glu Gln Gln Ser
         275                     280
```

<210> 5017
<211> 785
<212> DNA
<213> Homo sapiens

<400> 5017
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agcatcctct ccaccctgca ttccaaatgc tgcttgctgc ctgccctgcc ctccgatgca
120
ggggtggggt ggggggcgga gggcccgccc agcatagctg cagtgtcaca aagccatggc
180
agaaggtcct agcggcgcca ccctgcccca gcctgaggag gagggagagg gaggaacaac
240
cctgggcaga cggggcctca gggacctgtg tccttccgcc tccagagctg cccagccacg
300
ggctctcagg gtgctggggc agccccaggt cccctcttga actcagctgg ggccaggggc
360
cctcagaatg aaggcaggca ccaggcagga gcagcatccc cctccttgac ggtgctggca
420
ggagggccgc gccatgctga ctgcttgaac ctctgctgac ctgacagtgc tggcgggagg
480
gccgcaccat gctgactgcc tgaatctctg ctgaggctgc ctgcctgccg ggcccagctc
540
agcgccctct ccactgcgaa tcagtggcga tcatgtgatt tctatttctg ccccacaggg
600
taagggacga gtcttctgga aggctctgcc atggacattt gtcctcgggc tcagaggccc
660
caccctgccc cacacctgcc cctaatcact gcagtgtcca gcccagtgtt gaacagattg
720
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tagcgttctg tctcattacg agcaaataaa tagactttca ttggaaaaaa aaaaaaaaaa
780
aaaaa
785

<210> 5018
<211> 63
<212> PRT
<213> Homo sapiens

<400> 5018
Gly Pro Ser Ala Ser Glu Gly Arg Asp Ala Val Ser Ala Ala Gly Ala
1   5   10   15
Ser His Thr Ser Ser Ile Leu Ser Thr Leu His Ser Lys Cys Cys Leu
            20   25   30
Leu Pro Ala Leu Pro Ser Asp Ala Gly Val Gly Trp Gly Ala Glu Gly
        35   40   45
Pro Pro Ser Ile Ala Ala Val Ser Gln Ser His Gly Arg Arg Ser
    50   55   60

<210> 5019
<211> 2766
<212> DNA
<213> Homo sapiens

<400> 5019
nngctcgagt actggcgaag acgagaagaa gaggagcgtt ggagaatgga aatgagacgt
60
tatgaagagg acatgtactg gaggagaatg gaggaagaac aacatcattg ggatgatcgc
120
cgccgaatgc cagatggagg ttatcctcat ggtcctccag gcccattagg ccttctggga
180
gtccgaccag gcatgcctcc tcagcctcag gggcctgcac ccttacgtcg tcctgactca
240
tctgatgacc gttatgtaat gacaaaacat gccaccattt atccaactga agaggagtta
300
caggcagttc agaaaattgt ttctattact gaacgtgctt taaaactcgt ttcagacagt
360
ttgtctgaac atgagaagaa caagaacaaa gagggagatg ataagaaaga gggaggtaaa
420
gacagagctt tgaaaggagt tttgcgagtg ggagtatttg caaaaggatt acttctccga
480
ggagatagaa atgtcaacct tgttttgctg tgctcagaga aaccttcaaa gacattatta
540
agccgtattg cagaaaacct acccaaacag cttgctttta taagccctga gaagtatgac
600
ataaaatgtg ctgtatctga agcggcaata attttgaatt catgtgtgga acccaaaatg
660
caagtcacta tcacactgac atctccaatt attcgagaag agaacatgag ggaaggagat
720
gtaacctcgg gtatggtgaa agacccaccg gacgtcttgg acaggcaaaa atgccttgac
780
gctctggctg ctctacgcca cgctaagtgg ttccaggcta gagctaatgg tctgcagtcc
840

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tgtgtgatta tcatacgcat tcttcgagac ctctgtcagc gagttccaac ttggtctgat
900
tttccaagct gggctatgga gttactagta gagaaagcaa tcagcagtgc ttctagccct
960
cagagccctg gggatgcact gagaagagtt tttgaatgca tttcttcagg gattattctt
1020
aaaggtagtc ctggacttct ggatccttgt gaaaaggatc cctttgatac cttggcaaca
1080
atgactgacc agcagcgtga agacatcaca tccagtgcac agtttgcatt gagactcctt
1140
gcattccgcc agatacacaa agttctaggc atggatccat taccgcaaat gagccaacgt
1200
tttaacatcc acaacaacag gaaacgaaga agagatagtg atggagttga tggatttgaa
1260
gctgagggga aaaagacaa aaaagattat gataactttt aaaaagtgtc tgtaaatctt
1320
cagtgttaaa aaaacagatg cccatttgtt ggctgttttt cattcataat aatgtctaca
1380
ttgaaaaatt tatcaagaat ttaaaggatt tcatggaaga accaagtttt tctatgatat
1440
taaaaaatgt acagtgttag gtattatttg aatggaaaga cacccaaaaa aaaaatgtgc
1500
tccgactagg gggaaaacag tagttccgat ttttttcccat tatttttatt ttattttctg
1560
gttgccctag cttccccccc tattttttgtg tcttttatta actagtgcat tgtcttatta
1620
aatcttcact gtatttaatg caggatgtgt gcttcagttg ctctgtgtat tttgatattt
1680
taatttagag gttttgtttg cttttttgaca ctagttgtaa gttactttgt tatagatggt
1740
atcctttacc ccttcttaat attttacagc agtacgtttt tttgtaacgt gagactgcag
1800
agtttgtttt tctatatgtg aaggattaca acacaaaaag ttatcctgcc attcgagtgc
1860
tcagaactga atgtttctgc agatcttgtg gcatttgtct ctagtgtgat atataaaggt
1920
gtaattaaga cagagttctg ttaatctaat caagtttgct gttagttgtg cattagcagt
1980
ataaaagcta atatatacta tatggtcttg caacagtttt aaagcctctg cataattgat
2040
aataaaaatg catgacattc ttgtttttaa tagactttta aaatcataat tttaggttta
2100
acacgtagat ctttgtacag ttgactttt gacatagcaa ggccaaaaat aactttctga
2160
atatttttt cttgtgtata agtggaaagg gcatttttca catataagtg ggctaaccaa
2220
tattttcaaa agaacttcat cattgtacaa ctaacaacag taactagccc ttaattatgg
2280
tgacagttcc ttattggtgt gtgtgagatt actctagcaa ctattacagt ataacacaga
2340
tgatcttctc cacacacccc atcacccaga taatttacag ttctgttaac agtgaggttg
2400
ataaagtatt actgataaaa aattatctaa ggaaaaaaac agaaaattat ttggtgtggc
2460
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catcttacct gcttatgtct cctacacaaa gctaaatatt ctagcagtga tgtaatgaaa
2520
aattacatct tactgttgat atatgtatgc tctggtacac agatgtcatt ttgttgtcac
2580
agcactacag tgaaatacac aaaaaatgaa attcatataa tgacttaaat gtattatatg
2640
ttagaattga caacataaac tacttttgct ttgaaatgat gtatgcttca gtaaaatcat
2700
attcaaattt aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa
2760
aaaaaa
2766
```

<210> 5020
<211> 433
<212> PRT
<213> Homo sapiens

<400> 5020

```
Xaa Leu Glu Tyr Trp Arg Arg Arg Glu Glu Glu Glu Arg Trp Arg Met
 1               5                  10                  15
Glu Met Arg Arg Tyr Glu Glu Asp Met Tyr Trp Arg Arg Met Glu Glu
            20                  25                  30
Glu Gln His His Trp Asp Asp Arg Arg Arg Met Pro Asp Gly Gly Tyr
        35                  40                  45
Pro His Gly Pro Pro Gly Pro Leu Gly Leu Leu Gly Val Arg Pro Gly
    50                  55                  60
Met Pro Pro Gln Pro Gln Gly Pro Ala Pro Leu Arg Arg Pro Asp Ser
65                  70                  75                  80
Ser Asp Asp Arg Tyr Val Met Thr Lys His Ala Thr Ile Tyr Pro Thr
                85                  90                  95
Glu Glu Glu Leu Gln Ala Val Gln Lys Ile Val Ser Ile Thr Glu Arg
            100                 105                 110
Ala Leu Lys Leu Val Ser Asp Ser Leu Ser Glu His Glu Lys Asn Lys
        115                 120                 125
Asn Lys Glu Gly Asp Asp Lys Lys Glu Gly Gly Lys Asp Arg Ala Leu
    130                 135                 140
Lys Gly Val Leu Arg Val Gly Val Phe Ala Lys Gly Leu Leu Leu Arg
145                 150                 155                 160
Gly Asp Arg Asn Val Asn Leu Val Leu Leu Cys Ser Glu Lys Pro Ser
                165                 170                 175
Lys Thr Leu Leu Ser Arg Ile Ala Glu Asn Leu Pro Lys Gln Leu Ala
            180                 185                 190
Phe Ile Ser Pro Glu Lys Tyr Asp Ile Lys Cys Ala Val Ser Glu Ala
        195                 200                 205
Ala Ile Ile Leu Asn Ser Cys Val Glu Pro Lys Met Gln Val Thr Ile
    210                 215                 220
Thr Leu Thr Ser Pro Ile Ile Arg Glu Glu Asn Met Arg Glu Gly Asp
225                 230                 235                 240
Val Thr Ser Gly Met Val Lys Asp Pro Pro Asp Val Leu Asp Arg Gln
                245                 250                 255
Lys Cys Leu Asp Ala Leu Ala Ala Leu Arg His Ala Lys Trp Phe Gln
            260                 265                 270
Ala Arg Ala Asn Gly Leu Gln Ser Cys Val Ile Ile Ile Arg Ile Leu
```

```
              275                    280                    285
Arg Asp Leu Cys Gln Arg Val Pro Thr Trp Ser Asp Phe Pro Ser Trp
        290                    295                    300
Ala Met Glu Leu Leu Val Glu Lys Ala Ile Ser Ser Ala Ser Ser Pro
305                    310                    315                    320
Gln Ser Pro Gly Asp Ala Leu Arg Arg Val Phe Glu Cys Ile Ser Ser
                325                    330                    335
Gly Ile Ile Leu Lys Gly Ser Pro Gly Leu Leu Asp Pro Cys Glu Lys
            340                    345                    350
Asp Pro Phe Asp Thr Leu Ala Thr Met Thr Asp Gln Gln Arg Glu Asp
            355                    360                    365
Ile Thr Ser Ser Ala Gln Phe Ala Leu Arg Leu Leu Ala Phe Arg Gln
        370                    375                    380
Ile His Lys Val Leu Gly Met Asp Pro Leu Pro Gln Met Ser Gln Arg
385                    390                    395                    400
Phe Asn Ile His Asn Asn Arg Lys Arg Arg Arg Asp Ser Asp Gly Val
                405                    410                    415
Asp Gly Phe Glu Ala Glu Gly Lys Lys Asp Lys Lys Asp Tyr Asp Asn
            420                    425                    430
Phe
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<210> 5021
<211> 494
<212> DNA
<213> Homo sapiens

<400> 5021
ntcatgacag cctaccattg aatttacaat tctgatatta atgaaatatc tctataaagg
60
gttgaagtgt cttcctgcaa caattgccaa ggaacaaaat tgtcaattta ttaatgaaac
120
atgacgtgtg ttgaacaaga caagctgggt caagcatttg aagatgcttt tgaggttctg
180
aggcaacatt caactggaga tcttcagtac tcgccagatt acaaaaatta cctggcttta
240
atcaaccatc gtcctcatgt caaaggaaat tccagctgct atggagtgtt gcctacagag
300
gagcctgtct ataattggag aacggtaatt aacagtgctg cggacttcta ttttgaagga
360
aatattcatc aatctctgca gaacataact gaaaaccagc tggtacaacc cactattctc
420
cagcaaaagg ggggaaaagg caggaagaag cttagactgt ttgaatacct tcacgaatcc
480
ctgtgtaatc cgga
494
```

```
<210> 5022
<211> 124
<212> PRT
<213> Homo sapiens

<400> 5022
Met Thr Cys Val Glu Gln Asp Lys Leu Gly Gln Ala Phe Glu Asp Ala
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 1                    5                    10                   15
Phe Glu Val Leu Arg Gln His Ser Thr Gly Asp Leu Gln Tyr Ser Pro
            20                   25                   30
Asp Tyr Lys Asn Tyr Leu Ala Leu Ile Asn His Arg Pro His Val Lys
            35                   40                   45
Gly Asn Ser Ser Cys Tyr Gly Val Leu Pro Thr Glu Glu Pro Val Tyr
            50                   55                   60
Asn Trp Arg Thr Val Ile Asn Ser Ala Ala Asp Phe Tyr Phe Glu Gly
65                   70                   75                   80
Asn Ile His Gln Ser Leu Gln Asn Ile Thr Glu Asn Gln Leu Val Gln
                85                   90                   95
Pro Thr Ile Leu Gln Gln Lys Gly Gly Lys Gly Arg Lys Lys Leu Arg
                100                  105                  110
Leu Phe Glu Tyr Leu His Glu Ser Leu Cys Asn Pro
            115                  120
```

<210> 5023
<211> 3482
<212> DNA
<213> Homo sapiens

<400> 5023
gggccgccgc agaggcccgg ccgcagcgca gggaagcctg ggggccagag gtcgccgctg_ ._
60
ccgccatgcc gctgctcttc ctcgagcgct tcccctggcc cagcctccgc acctacacgg
120
gcctcagcgg cctggccctg ctgggcacca tcatcagcgc ctaccgcgcg ctcagccagc
180
ccgaggccgg ccccggcgag ·ccggaccagc taacggcctc gctgcagcct gagccgccgg
240
cgcccgcccg gccgagcgcc gggggacccc gggcccgcga tgtggcccag tacctgctct
300
cagacagcct cttcgtgtgg gttctagtaa ataccgcttg ctgtgttttg atgttggtgg
360
ctaagctcat ccagtgtatt gtgtttggcc ctcttcgagt gagtgagaga cagcatctca
420
aagacaaatt ttggaatttt attttctaca gttcatttt catctttggt gtgctgaatg
480
tccagacagt ggaagaggtg gtcatgtggt gcctctggtt tgccggactt gtctttctgc
540
acctgatggt tcagctctgc aaggatcgat ttgaatatct ttccttctcg cccaccacgc
600
cgatgagcag ccacggtcga gtcctgtccc tgttggttgc catgctgctt tcctgctgtg
660
gactggcggc cgtctgctcc atcaccggct acacccacgg aatgcacacc ttggctttca
720
tggctgcaga gtctcttctt gtgacagtga ggactgctca tgtgatttta cgatacgtaa
780
ttcacctctg ggacctcaac cacgaaggga cgtgggaagg aaaggggacg tatgtctatt
840
acacagactt tgtcatggag ctcactctcc tgtccctgga cctcatgcac catattcaca
900
tgttgttatt tggcaacatc tggttatcca tggccagcct ggtcatcttt atgcagctgc
960
```

```
gttacctgtt tcatgaggtg caacgtcgaa ttcgtcggca caagaactat ctacgtgtgg
1020
ttggaaacat ggaggccagg tttgcagttg caactccaga ggagctggct gtcaacaatg
1080
acgactgtgc catctgttgg gactccatgc aggctgcgcg gaaactgccc tgtggacatc
1140
ttttccacaa ctcctgtctt cgttcctggc tagaacaaga cacctcctgt ccaacatgca
1200
gaatgtctct taatattgcc gacaataatc gtgtcaggga agaacatcaa ggagagaact
1260
tggatgagaa tttggttcct gtagcagcag ccgaagggag acctcgctta aaccaacaca
1320
atcacttctt ccatttcgat gggtctcgga ttgcgagctg gctgccgagt ttttcggttg
1380
aagtgatgca caccaccaac attcttggca ttacgcaggc cagcaactcc cagctcaatg
1440
caatggctca tcagattcaa gagatgtttc cccaggttcc ataccatctg gtactgcagg
1500
acctccagct gacacgctca gttgaaataa caacagacaa tattttagaa ggacggattc
1560
aagtaccttt tcctacacag cggtcagata gcatcagacc tgcattgaac agtcctgtgg
1620
aaaggccaag cagtgaccag gaagagggag aaacttctgc tcagaccgag cgtgtgccac
1680
tggacctcag tcctcgcctg gaggagacgc tggacttcgg cgaggtggaa gtggagccca
1740
gtgaggtgga agacttcgag gctcgtggga gccgcttctc caagtctgct gatgagagac
1800
agcgcatgct ggntgcagcg taaggacgaa ctcctccagc aagctcgcaa acgtttcttg
1860
aacaaaagtt ctgaagatga tgcggcctca gagagcttcc tcccctcgga aggtgcgtcc
1920
tctgaccccg tgaccctgcg tcgaaggatg ctggctgccg cccggaacgg aggcttcaga
1980
agcagcagac ctcctagcgc tcccttgcct tcctcagctg cctcctgcgc cctgtgcccg
2040
actgactgga ggaggcctgt cccaattctg ccgctccatg gaaaagcggg cttgactgca
2100
ttgccgctgt ataaagcatg tggtcttata gtgtttggac agctgataaa tttaatcctt
2160
ctttgtaata ctttcaatgt gacatttctc ttccccttag aaacactgca aattttaact
2220
gtaggtatga tctcttctgg tgttgactgg actgcttggg gtggggacg atcaggagga
2280
agtgagncag tcgcctgcct gcagcaggca gcttctactc ctgcctcatg catacgtccc
2340
acaaatgcag gtgtcctgag caccacaccc agtgggaaga gtgtggggga ggcgcacagt
2400
gtgagcccgc ccccacgtcg tggggtaaca tctgttatca aactgctgtc gttgttgtgg
2460
aagcatgtag actgtgccag agccagaccc acgggctcat gcacccctga gcagcagggc
2520
atcttggaaa aggaactctt ggttcgatac ctggagcaga ggaggggaaa gtccagggct
2580
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ataggggtgtg atgaagtcac cccttctgt cccactacat ctgggactga ctttccgagc
2640
ctccagtcca aagccggctt gatttccgtg aactctggtg ctcctgcatc tcatgagtgt
2700
gccccatggg tcccctcccc tctcagcatt tccttgtccc gtctggacct ggggagtggt
2760
taggcagcaa gctttggttt atggttttca ttcattggtg aagtaaatta ggcagtgcta
2820
aagcctgtgg gtttggtcct tgaacaagat gtgggccttg caagatggga gagtaaacct
2880
tgaagggctt tattaaagaa ataaaaaga actttgtat cttttatcct gggagcactg
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3000
cctgccttgg agagggccca ggtcccaaat ctcttcaaat tcttcacatg tttaactta
3060
aggatttgaa ccatgaagtc ataggttaca gacctcagtt ttatgcccca ttggattact
3120
tttttttttt tttttttta ctctttgaaa gctttgtttt gtggtagtcc ttttgggaag
3180
aatccagtat tatctacaat tattggcaaa gtttaaatgt attttacata acggaaagtt
3240
tttagaatgt tgaaaagtaa ttgaaaaagg tgataggtaa atttttaggc aaagataatt
3300
tatttcaata aatctttcaa aagccttacc ttgaaatgct gttagtaaat ttctgtgatt
3360
tttttttttt aatttgtttt gctgagagca tagctatttg tttttattgt aaaacaataa
3420
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3480
aa
3482

<210> 5024
<211> 323
<212> PRT
<213> Homo sapiens

<400> 5024
Met Arg Asp Ser Ala Cys Trp Xaa Gln Arg Lys Asp Glu Leu Leu Gln
 1   5   10   15
Gln Ala Arg Lys Arg Phe Leu Asn Lys Ser Ser Glu Asp Asp Ala Ala
            20   25   30
Ser Glu Ser Phe Leu Pro Ser Glu Gly Ala Ser Ser Asp Pro Val Thr
        35   40   45
Leu Arg Arg Arg Met Leu Ala Ala Ala Arg Asn Gly Gly Phe Arg Ser
    50   55   60
Ser Arg Pro Pro Ser Ala Pro Leu Pro Ser Ser Ala Ala Ser Cys Ala
65   70   75   80
Leu Cys Pro Thr Asp Trp Arg Arg Pro Val Pro Ile Leu Pro Leu His
                85   90   95
Gly Lys Ala Gly Leu Thr Ala Leu Pro Leu Tyr Lys Ala Cys Gly Leu
            100   105   110
Ile Val Phe Gly Gln Leu Ile Asn Leu Ile Leu Leu Cys Asn Thr Phe

                                  4203

```
            115                    120                    125
Asn Val Thr Phe Leu Phe Pro Leu Glu Thr Leu Gln Ile Leu Thr Val
        130                    135                    140
Gly Met Ile Ser Ser Gly Val Asp Trp Thr Ala Trp Gly Gly Gly Arg
145                    150                    155                    160
Ser Gly Gly Ser Glu Xaa Val Ala Cys Leu Gln Gln Ala Ala Ser Thr
                    165                    170                    175
Pro Ala Ser Cys Ile Arg Pro Thr Asn Ala Gly Val Leu Ser Thr Thr
                180                    185                    190
Pro Ser Gly Lys Ser Val Gly Glu Ala His Ser Val Ser Pro Pro Pro
            195                    200                    205
Arg Arg Gly Val Thr Ser Val Ile Lys Leu Leu Ser Leu Leu Trp Lys
        210                    215                    220
His Val Asp Cys Ala Arg Ala Arg Pro Thr Gly Ser Cys Thr Pro Glu
225                    230                    235                    240
Gln Gln Gly Ile Leu Glu Lys Glu Leu Leu Val Arg Tyr Leu Glu Gln
                    245                    250                    255
Arg Arg Gly Lys Ser Arg Ala Ile Gly Cys Asp Glu Val Thr Pro Phe
                260                    265                    270
Cys Pro Thr Thr Ser Gly Thr Asp Phe Pro Ser Leu Gln Ser Lys Ala
            275                    280                    285
Gly Leu Ile Ser Val Asn Ser Gly Ala Pro Ala Ser His Glu Cys Ala
        290                    295                    300
Pro Trp Val Pro Ser Pro Leu Ser Ile Ser Leu Ser Arg Leu Asp Leu
305                    310                    315                    320
Gly Ser Gly
```

<210> 5025
<211> 2596
<212> DNA
<213> Homo sapiens

<400> 5025
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ngttgcatgt actgtatgtg gagcagtgta cagtgaagcg gaggcagagc ggctccgcga
60
gcttctctcc actttcccat agagaaaccc tgactggccg ctgagggcta gctacacaca
120
cgccctcacg cccggcgagc ccgcgaggtc actatcatat gacaaaggct ttgccgcagt
180
tcatcttcct ccctgtgtac tttccatttg ccttcctgga atcctgctgg catcacagaa
240
gctggaagtt gtgatgttcc actgaaatca caatggaaag tctgacttga ctggtcacag
300
taatgaaagg cagtaataga aataaggatc attcagcaga aggagaaggg gttggaaaac
360
gaccaaaacg aaagtgtgct ttcagtggca tccatttgct agcaaagaaa cttcttgatt
420
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480
gggggccgat ggcctaagag caagagtgtg gtgaaactga agatggatga atcaccagag
540
cagcgagccc ggagaccaat gaatgcattt cttttatttt gcaaacgcca tcgctctctt
600
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660
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720
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900
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1260
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1320
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1380
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1980
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2040
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2100
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2160
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2220
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                                    4205

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2340

caaaagaaga ctgtctcctt ggctccgcaa agctggatga agaatttgaa aaaaaattca
2400

acagcctccc tcaatatagt cctgttacat ttgaccggaa atgtgtacct gtcccaagaa
2460

aaaagaagaa gactggaaat gtgtcctcag aaccgactaa aaccagcaaa ggtcctttcc
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2580

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2596

<210> 5026
<211> 136
<212> PRT
<213> Homo sapiens

<400> 5026
Met Asp Glu Ser Pro Glu Gln Arg Ala Arg Arg Pro Met Asn Ala Phe
1   5   10   15
Leu Leu Phe Cys Lys Arg His Arg Ser Leu Val Arg Gln Glu His Pro
            20   25   30
Arg Leu Asp Asn Arg Gly Ala Thr Lys Ile Leu Ala Asp Trp Trp Ala
        35   40   45
Val Leu Asp Pro Lys Glu Lys Gln Lys Tyr Thr Asp Met Ala Lys Glu
    50   55   60
Tyr Lys Asp Ala Phe Met Lys Ala Asn Pro Gly Tyr Lys Trp Cys Pro
65   70   75   80
Thr Thr Asn Lys Pro Val Lys Ser Pro His Pro Leu Ser Ile His Glu
                85   90   95
Arg Asn Phe Gly Pro Ser His Leu Thr Leu Gln Glu Thr Cys Gln Ala
            100   105   110
Pro Arg Lys Gln Arg Leu Lys Lys Cys Leu Ser Leu Thr Leu Glu Trp
        115   120   125
Leu Ile Leu Leu Lys Trp Glu Ala
    130   135

<210> 5027
<211> 359
<212> DNA
<213> Homo sapiens

<400> 5027
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cagcgggcgc agcggggaca tggtggcagt gcgggcaaga cgcacaagtt ctctgccggc
120

acctacccgc gcctggagga gtaccgccgg ggcatcttag agactggtc caacgctatc
180

tccgcgctct actgcaggtg cagctgatgc attgctggtc tctcatctgc agcttccaca
240

gagtgccaag cccctcactc agcccatccc tgggctctgc tccggggccc caagacccag
300
gaggaggagc gttctgcctg ccccctccca cctcccctgc aatacagcct ttgtgcggn
359

<210> 5028
<211> 68
<212> PRT
<213> Homo sapiens

<400> 5028
Xaa Gly Gly Gly Ala Gly Ala Leu Gly Ala Arg His Gly Gly Lys Gly
 1   5   10   15
Gln Gly Gln Gln Gln Arg Ala Gln Arg Gly His Gly Gly Ser Ala Gly
            20   25   30
Lys Thr His Lys Phe Ser Ala Gly Thr Tyr Pro Arg Leu Glu Glu Tyr
            35   40   45
Arg Arg Gly Ile Leu Gly Asp Trp Ser Asn Ala Ile Ser Ala Leu Tyr
    50   55   60
Cys Arg Cys Ser
65

<210> 5029
<211> 1440
<212> DNA
<213> Homo sapiens

<400> 5029
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120
ttcatgtgtg ctgatatttt tggatcattt gtttactcgt tttttgagtt tacctgattt
180
ttttttctc tcaggtaata ggaaatgaat gatgatggaa aagtcaatgc tagctctgag
240
gggtacttta ttttagttgg attttctaat tggccttatc tggaagtagt tctctttgtg
300
gttattttga tcttctgctt gatgacactg ataggaaacc tgttcatcat catcctgacg
360
tacctggact cccatctcca tactcccttg tatttcttcc tttcaaatct ctcatttctg
420
gatctctgct acaccaccag ctctatccct cagttgctgg tcagtctctg gggtgtggaa
480
aagaccattt cttatgctgg ttgcatggtt caactttact tttttctcac actgggaacc
540
acagagtgtg tcctactggt ggtgatgtcc tatgaccgtt atgcagctgt gtgtagacct
600
ttgcattaca ctgtcctcat gcactctcgt ttctgccact tgttggctgt ggcttcttgg
660
gtaagtggtt ttacaaaccc agcacttcat tcctccttca ccttctgggt acctctgtgt
720
ggacaccgcc aaatagatca ctttttctgt gaagttccgg cactttatg attatcattt
780

4207

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900
tcaaccactg ggcttcagaa agtatttgga acatgtggag ctcatcatat ggttgtatct
960
ctcttttca ttccggccat gtgcatgtat ctccagccac catcaggaa ttctcaagat
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caaggcaagt tcattgctct ctttttatact gttgttacac ctagtcttaa ccctctaatc
1080
tacaccctca gaaacaaaga tgtaagaggg gtagtgaaga gactaagggg gtgggagtga
1140
gcctgtgttt gtgtgatatt aacaatataa tggagtcttt cctcacaatg attcatccat
1200
ctgttcattt atcaaccatt cttttattca ctcactctgt tagcacttgc tgagcatgta
1260
ctctaacaaa gtcgtggaga tcctggtaac aggtaggaat aaaacacatt cagcttaaat
1320
accattcact tttggagaaa acagctgtgt aaaatcaaga taaaacatct atagtgatgt
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1440
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<210> 5030
<211> 188
<212> PRT
<213> Homo sapiens

<400> 5030

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Met Asn Asp Asp Gly Lys Val Asn Ala Ser Ser Glu Gly Tyr Phe Ile
1               5                   10                  15
Leu Val Gly Phe Ser Asn Trp Pro Tyr Leu Glu Val Val Leu Phe Val
            20                  25                  30
Val Ile Leu Ile Phe Cys Leu Met Thr Leu Ile Gly Asn Leu Phe Ile
        35                  40                  45
Ile Ile Leu Thr Tyr Leu Asp Ser His Leu His Thr Pro Leu Tyr Phe
    50                  55                  60
Phe Leu Ser Asn Leu Ser Phe Leu Asp Leu Cys Tyr Thr Thr Ser Ser
65                  70                  75                  80
Ile Pro Gln Leu Leu Val Ser Leu Trp Gly Val Glu Lys Thr Ile Ser
                85                  90                  95
Tyr Ala Gly Cys Met Val Gln Leu Tyr Phe Phe Leu Thr Leu Gly Thr
            100                 105                 110
Thr Glu Cys Val Leu Leu Val Val Met Ser Tyr Asp Arg Tyr Ala Ala
            115                 120                 125
Val Cys Arg Pro Leu His Tyr Thr Val Leu Met His Ser Arg Phe Cys
        130                 135                 140
His Leu Leu Ala Val Ala Ser Trp Val Ser Gly Phe Thr Asn Pro Ala
145                 150                 155                 160
Leu His Ser Ser Phe Thr Phe Trp Val Pro Leu Cys Gly His Arg Gln
                165                 170                 175
Ile Asp His Phe Phe Cys Glu Val Pro Ala Leu Leu
                180                 185
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<210> 5031
<211> 505
<212> DNA
<213> Homo sapiens

<400> 5031
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gaatggggtg gaccgacgtt ccctgcagcg ttcagcaagg ctggctctag aagtgctgga
120
gagggccaag aggagggcgg tggactggca tgccctggag cgtcccaaag gctgcatggg
180
ggtccttgcc cgggaggcgc cccacctaga gaaacagccg gcagccggcc cgcagcgcgt
240
tctcccggga gagagagaag agagaccccc aacccttagt gcttccttca gaacaatggc
300
tgaattcatg gactatactt caagtcagtg tgggaaatat tattcatctg tgccagagga
360
aggaggggca acccatgtct atcgttatca cagaggcgag tcgaagctgc acatgtgctt
420
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480
ctatcaaata tcagagcatg ctcca
505

<210> 5032
<211> 158
<212> PRT
<213> Homo sapiens

<400> 5032
Met Asp Asn Cys Leu Ala Ala Ala Ala Leu Asn Gly Val Asp Arg Arg
1   5   10   15
Ser Leu Gln Arg Ser Ala Arg Leu Ala Leu Glu Val Leu Glu Arg Ala
            20   25   30
Lys Arg Arg Ala Val Asp Trp His Ala Leu Glu Arg Pro Lys Gly Cys
        35   40   45
Met Gly Val Leu Ala Arg Glu Ala Pro His Leu Glu Lys Gln Pro Ala
    50   55   60
Ala Gly Pro Gln Arg Val Leu Pro Gly Glu Arg Glu Glu Arg Pro Pro
65   70   75   80
Thr Leu Ser Ala Ser Phe Arg Thr Met Ala Glu Phe Met Asp Tyr Thr
                85   90   95
Ser Ser Gln Cys Gly Lys Tyr Tyr Ser Ser Val Pro Glu Glu Gly Gly
            100   105   110
Ala Thr His Val Tyr Arg Tyr His Arg Gly Glu Ser Lys Leu His Met
        115   120   125
Cys Leu Asp Ile Gly Asn Gly Gln Arg Lys Asp Arg Lys Lys Thr Ser
    130   135   140
Leu Gly Pro Gly Gly Ser Tyr Gln Ile Ser Glu His Ala Pro
145   150   155

<210> 5033
<211> 2888

<212> DNA
<213> Homo sapiens

<400> 5033
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ggtatccagg tccgcatgaa gtggtgtgcc acgtgccact tctaccgccc gccgcgctgc
120
tcccactgca gcgtctgtga caactgtgta gaggtgactg ggaagttccg cggggggtgtg
180
aacccttttca cccgaggctg ctgtgggaat gtggagcacg tgctgtgtag cccctggccg
240
ccccggtacg tggtggagcc accccggctg ccgctcgcgg tgagtttgaa gccgcctttc
300
cttaggcctg aactcctgga ccgagctgca ccgctcaagg tcaagcttag tgacaacggg
360
ctgaaggctg gcctgggccg tagcaagtcc aagggcagcc tggaccggct ggatgagaag
420
ccactggact tggggccacc actgcccccc aagatagagg ctggcacgtt cagcagtgac
480
ctgcagaccc cgcgcccagg cagtgctgag agtgccctgt cggtgcagag gaccagcccc
540
ccgacacctg ccatgtacaa gtttaggccg gctttcccca cgggtcccaa ggtgcccttc
600
tgtggaccag gcgagcaggt tccaggccct gattccctga ccctgggga cgacaacatc
660
cgtagcctgg actttgtgtc cgagccgagc ctggacctcc ctgactatgg gccaggggggc
720
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780
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1080
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1200
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1320
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1380
tcgctgtcca gctccgtgag ccgtgcaccg cggacgtcgt cctcctccct gcaggctgat
1440
caggccagca gcaacgcccc cggggccccg gcccagcagt ggctcacaca ggtcacctgc
1500

4210

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1560
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1920
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1980
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2040
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2760
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<210> 5034
<211> 550
<212> PRT
<213> Homo sapiens
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<400> 5034
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Val Asp Val Arg Gly Ile Gln Val Arg Met Lys Trp Cys Ala Thr Cys
            20                  25                  30
His Phe Tyr Arg Pro Pro Arg Cys Ser His Cys Ser Val Cys Asp Asn
        35                  40                  45
Cys Val Glu Val Thr Gly Lys Phe Arg Gly Gly Val Asn Pro Phe Thr
    50                  55                  60
Arg Gly Cys Cys Gly Asn Val Glu His Val Leu Cys Ser Pro Leu Ala
65                  70                  75                  80
Pro Arg Tyr Val Val Glu Pro Pro Arg Leu Pro Leu Ala Val Ser Leu
            85                  90                  95
Lys Pro Pro Phe Leu Arg Pro Glu Leu Leu Asp Arg Ala Ala Pro Leu
        100                 105                 110
Lys Val Lys Leu Ser Asp Asn Gly Leu Lys Ala Gly Leu Gly Arg Ser
    115                 120                 125
Lys Ser Lys Gly Ser Leu Asp Arg Leu Asp Glu Lys Pro Leu Asp Leu
    130                 135                 140
Gly Pro Pro Leu Pro Pro Lys Ile Glu Ala Gly Thr Phe Ser Ser Asp
145                 150                 155                 160
Leu Gln Thr Pro Arg Pro Gly Ser Ala Glu Ser Ala Leu Ser Val Gln
            165                 170                 175
Arg Thr Ser Pro Pro Thr Pro Ala Met Tyr Lys Phe Arg Pro Ala Phe
        180                 185                 190
Pro Thr Gly Pro Lys Val Pro Phe Cys Gly Pro Gly Glu Gln Val Pro
        195                 200                 205
Gly Pro Asp Ser Leu Thr Leu Gly Asp Asp Asn Ile Arg Ser Leu Asp
    210                 215                 220
Phe Val Ser Glu Pro Ser Leu Asp Leu Pro Asp Tyr Gly Pro Gly Gly
225                 230                 235                 240
Leu His Ala Ala Tyr Pro Pro Ser Pro Leu Ser Ala Ser Asp Ala
            245                 250                 255
Phe Ser Gly Ala Leu Arg Ser Leu Ser Leu Lys Ala Ser Ser Arg Arg
        260                 265                 270
Gly Gly Asp His Val Ala Leu Gln Pro Leu Arg Ser Glu Gly Gly Pro
    275                 280                 285
Pro Thr Pro His Arg Ser Ile Phe Ala Pro His Ala Leu Pro Asn Arg
    290                 295                 300
Asn Gly Ser Leu Ser Tyr Asp Ser Leu Leu Asn Pro Gly Ser Pro Gly
305                 310                 315                 320
Gly His Ala Cys Pro Ala His Pro Ala Val Gly Val Ala Gly Tyr His
            325                 330                 335
Ser Pro Tyr Leu His Pro Gly Ala Thr Gly Asp Pro Pro Arg Pro Leu
        340                 345                 350
Pro Arg Ser Phe Ser Pro Val Leu Gly Pro Arg Pro Arg Glu Pro Ser
    355                 360                 365
Pro Val Arg Tyr Asp Asn Leu Ser Arg Thr Ile Met Ala Ser Ile Gln
    370                 375                 380
Glu Arg Lys Asp Arg Glu Glu Arg Glu Arg Leu Leu Arg Ser Gln Ala
385                 390                 395                 400
Asp Ser Leu Phe Gly Asp Ser Gly Val Tyr Asp Ala Pro Ser Ser Tyr
            405                 410                 415
Ser Leu Gln Gln Ala Ser Val Leu Ser Glu Gly Pro Arg Gly Pro Ala
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           420                    425                    430
Leu Arg Tyr Gly Ser Arg Asp Asp Leu Val Ala Gly Pro Gly Phe Gly
        435                    440                    445
Gly Ala Arg Asn Pro Ala Leu Gln Thr Ser Leu Ser Ser Leu Ser Ser
    450                    455                    460
Ser Val Ser Arg Ala Pro Arg Thr Ser Ser Ser Ser Leu Gln Ala Asp
465                    470                    475                    480
Gln Ala Ser Ser Asn Ala Pro Gly Ala Pro Ala Gln Gln Trp Leu Thr
                485                    490                    495
Gln Val Thr Cys Thr Pro Gly Pro Ala Leu Pro Ala Arg His Ser Pro
            500                    505                    510
Leu Thr Ile Leu Arg Gly Pro Gln Ser Cys Arg Leu His Pro His Gly
        515                    520                    525
Pro Pro Arg Ala Thr Ala Leu Ala Asp Arg Ala Glu Gly Pro Pro Ser
    530                    535                    540
Ala Glu Asp Ser Pro Lys
545                    550
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<210> 5035
<211> 2002
<212> DNA
<213> Homo sapiens

<400> 5035
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120
cttgatgccc actttgaaaa ccttctggcc cgggcagaca gcaccaagaa ctggacagag
180
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240
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660
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900
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4213

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960
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1020
agtgagctgg ccctgctggc tgatgagctc atcactgtct acagcctgcc tggcatggac
1080
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1680
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1740
tctggtgttt ttacttctgc ctgcgtttgc tctctagcca ataaaccgtc cttgtgtgcg
1800
agcgcaaagc tcgggtgctc tatgactacg aggcagccga cagcagtgag ctggccctgc
1860
tggctgatga gctcatcact gtctacagcc tgcctggcat ggaccctgac tggctcattg
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1980
caggtgcccc catccccccc gc
2002

<210> 5036
<211> 384
<212> PRT
<213> Homo sapiens

<400> 5036
Arg Pro Cys Gly His Ala Met Asp Phe Asn Met Lys Lys Leu Ala Ser
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Asp Ala Gly Ile Phe Phe Thr Arg Ala Val Gln Phe Thr Glu Glu Lys
            20   25   30
Phe Gly Gln Ala Glu Lys Thr Glu Leu Asp Ala His Phe Glu Asn Leu
        35   40   45
Leu Ala Arg Ala Asp Ser Thr Lys Asn Trp Thr Glu Lys Ile Leu Arg
    50   55   60
Gln Thr Glu Val Leu Leu Gln Pro Asn Pro Ser Ala Arg Val Glu Glu

```
65                    70                    75                    80
Phe Leu Tyr Glu Lys Leu Asp Arg Lys Val Pro Ser Arg Val Thr Asn
                85                    90                    95
Gly Glu Leu Leu Ala Gln Tyr Met Ala Asp Ala Ala Ser Glu Leu Gly
            100                   105                   110
Pro Thr Thr Pro Tyr Gly Lys Thr Leu Ile Lys Val Ala Glu Ala Glu
            115                   120                   125
Lys Gln Leu Gly Ala Ala Glu Arg Asp Phe Ile His Thr Ala Ser Ile
        130                   135                   140
Ser Phe Leu Thr Pro Leu Arg Asn Phe Leu Glu Gly Asp Trp Lys Thr
145                   150                   155                   160
Ile Ser Lys Glu Ser Arg Leu Leu Gln Asn Arg Arg Leu Asp Leu Asp
                165                   170                   175
Ala Cys Lys Ala Arg Leu Lys Lys Ala Lys Ala Ala Glu Ala Lys Ala
                180                   185                   190
Thr Leu Trp Asn Asp Glu Val Asp Lys Ala Glu Gln Glu Leu Arg Val
            195                   200                   205
Ala Gln Thr Glu Phe Asp Arg Gln Ala Glu Val Thr Arg Leu Leu Leu
        210                   215                   220
Glu Gly Ile Ser Ser Thr His Val Asn His Leu Arg Cys Leu His Glu
225                   230                   235                   240
Phe Val Lys Ser Gln Thr Thr Tyr Tyr Ala Gln Cys Tyr Arg His Met
..          245                   250                   255
Leu Asp Leu Gln Lys Gln Leu Gly Ser Ser Gln Gly Ala Ile Ser Arg
            260                   265                   270
His Leu Arg Gly His His Arg Ala Arg Leu Pro Pro Leu Ser Ser Thr
            275                   280                   285
Ser Pro Thr Thr Ala Ala Ala Thr Met Pro Val Val Pro Ser Val Ala
        290                   295                   300
Ser Leu Ala Pro Pro Gly Glu Ala Ser Leu Cys Leu Glu Glu Val Ala
305                   310                   315                   320
Pro Pro Ala Ser Gly Thr Arg Lys Ala Arg Val Leu Tyr Asp Tyr Glu
            325                   330                   335
Ala Ala Asp Ser Ser Glu Leu Ala Leu Leu Ala Asp Glu Leu Ile Thr
            340                   345                   350
Val Tyr Ser Leu Pro Gly Met Asp Pro Asp Trp Leu Ile Gly Glu Arg
            355                   360                   365
Gly Asn Lys Lys Gly Lys Val Pro Val Thr Tyr Leu Glu Leu Leu Ser
    370                   375                   380
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<210> 5037
<211> 2102 ·
<212> DNA
<213> Homo sapiens

<400> 5037
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120
gtttgctgga gttgagggtc agccgtccct ctgcagggtg ggtcaccctc ctgttaacca
180
cgccctgccc cgccccgctt cctccctctc gtgcgtcatc aagcatttgc tgttgttttc
240

4215

```
ctcatagtag tgataagaga aaagtgaaat atctttgtct ccctgtctct gtcaaaagtg
300
ggaaaacgca agatagacca ggagggccgt gtgtttcaag aaaagtggga gagagcgtat
360
ttcttcgtgg aagtacagaa tattccaaca tgtctcatat gcaaacaaag catgtctgtg
420
tccaaagaat ataacctaag acgccactat caaaccaatc acagcaagca ttatgaccag
480
tatacggaaa gaatgcgtga cgagaagctt cacgagctga aaaagggct caggaagtat
540
ctcttaggct catcagacac cgagtgtccc gagcaaaaac aagtgtttgc aaacccaagt
600
ccaacccaga atcccccgt gcagcctgta gaggacctag ctgggaactt atgggagaag
660
ttacgtgaaa aaatcaggtc ttttgtggca tattctatcg caatcgatga gatcacggat
720
ataaataata ccacccagtt ggccatattc atccgtggtg tcgatgagaa tttcgatgtg
780
tccgaagaac ttctggacac ggtgcccatg acgggtacaa aatctggcaa cgagatcttt
840
tcgcgtgttg agaagagcct gaaaaagttc tgtatcgact ggtcgaaatt agtaagcgtg
900
gcctccactg cacccccagc gatggtggat gccaataacg ggcttgtcac aaaactgaag
960
tccagggtgg cgacgttctg caagggtgcg gaactgaagt ccatctgttg tataattcat
1020
ccggaatcac tctgtgctca gaagttgaag atggaccacg tcatggacgt ggtagtgaag
1080
tccgtgaact ggatatgctc ccggggactg aaccacagcg agttcacaac cttgctctat
1140
gagctggaca gccagtatgg tagcctcctg tactacacgg agattaagtg gctcagtcgc
1200
gggctcgtgc taaagagatt tttcgaatcc ttggaagaaa tcgactcctt catgtcatcc
1260
agaggaaac ccctgcctca actgagctcc atagattgga tccgagacct ggccttcttg
1320
gttgacatga cgatgcatct gaacgctttg aacatctctc tccaaggaca ctcccaaatc
1380
gtcacgcaga tgtatgacct gatccgggcg ttcctagcaa aactgtgcct ctgggagact
1440
catttgacga ggaataatct ggcccacttt cccaccctga aattggcttc cagaaatgaa
1500
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1560
ctgtctgatt tcaaactcta cgaaagcgaa ctgactctgt tcagctcccc gttctccacg
1620
aagatcgaca gtgtgcacga ggagctccag atggaggtta tcgacctgca atgcaacacg
1680
gtcctgaaga cgaaatacga caaggtggga ataccagaat tctacaagta cctctggggt
1740
agctacccga aatacaagca ccattgcgca aagattcttt ccatgttcgg gagcacctac
1800
atctgcgaac agctgttctc cattatgaaa ctgagcaaaa caaaatactg ctcccagtta
1860
```

```
aaggattccc agtgggattc tgtactccac atcgcaacgt gatggagaga aaactcctgg
1920
cagggcccta tggtgggaaa ggctggagtc ttctagtccc aagggattgg gagatgacaa
1980
aatgaatttt tttttctttt ttgagatgga gtcttgctct gtcgcccagg ttggagtgca
2040
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2100
ca
2102
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<210> 5038
<211> 533
<212> PRT
<213> Homo sapiens

<400> 5038

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Glu Arg Ala Tyr Phe Phe Val Glu Val Gln Asn Ile Pro Thr Cys Leu
            20                  25                  30
Ile Cys Lys Gln Ser Met Ser Val Ser Lys Glu Tyr Asn Leu Arg Arg
        35                  40                  45
His Tyr Gln Thr Asn His Ser Lys His Tyr Asp Gln Tyr Thr Glu Arg
    50                  55                  60
Met Arg Asp Glu Lys Leu His Glu Leu Lys Lys Gly Leu Arg Lys Tyr
65                  70                  75                  80
Leu Leu Gly Ser Ser Asp Thr Glu Cys Pro Glu Gln Lys Gln Val Phe
                85                  90                  95
Ala Asn Pro Ser Pro Thr Gln Lys Ser Pro Val Gln Pro Val Glu Asp
            100                 105                 110
Leu Ala Gly Asn Leu Trp Glu Lys Leu Arg Glu Lys Ile Arg Ser Phe
        115                 120                 125
Val Ala Tyr Ser Ile Ala Ile Asp Glu Ile Thr Asp Ile Asn Asn Thr
    130                 135                 140
Thr Gln Leu Ala Ile Phe Ile Arg Gly Val Asp Glu Asn Phe Asp Val
145                 150                 155                 160
Ser Glu Glu Leu Leu Asp Thr Val Pro Met Thr Gly Thr Lys Ser Gly
                165                 170                 175
Asn Glu Ile Phe Ser Arg Val Glu Lys Ser Leu Lys Lys Phe Cys Ile
            180                 185                 190
Asp Trp Ser Lys Leu Val Ser Val Ala Ser Thr Gly Thr Pro Ala Met
        195                 200                 205
Val Asp Ala Asn Asn Gly Leu Val Thr Lys Leu Lys Ser Arg Val Ala
    210                 215                 220
Thr Phe Cys Lys Gly Ala Glu Leu Lys Ser Ile Cys Cys Ile Ile His
225                 230                 235                 240
Pro Glu Ser Leu Cys Ala Gln Lys Leu Lys Met Asp His Val Met Asp
                245                 250                 255
Val Val Val Lys Ser Val Asn Trp Ile Cys Ser Arg Gly Leu Asn His
            260                 265                 270
Ser Glu Phe Thr Thr Leu Leu Tyr Glu Leu Asp Ser Gln Tyr Gly Ser
        275                 280                 285
Leu Leu Tyr Tyr Thr Glu Ile Lys Trp Leu Ser Arg Gly Leu Val Leu
```

```
        290                     295                     300
Lys Arg Phe Phe Glu Ser Leu Glu Glu Ile Asp Ser Phe Met Ser Ser
305                     310                     315                     320
Arg Gly Lys Pro Leu Pro Gln Leu Ser Ser Ile Asp Trp Ile Arg Asp
                325                     330                     335
Leu Ala Phe Leu Val Asp Met Thr Met His Leu Asn Ala Leu Asn Ile
                340                     345                     350
Ser Leu Gln Gly His Ser Gln Ile Val Thr Gln Met Tyr Asp Leu Ile
                355                     360                     365
Arg Ala Phe Leu Ala Lys Leu Cys Leu Trp Glu Thr His Leu Thr Arg
                370                     375                     380
Asn Asn Leu Ala His Phe Pro Thr Leu Lys Leu Ala Ser Arg Asn Glu
385                     390                     395                     400
Ser Asp Gly Leu Asn Tyr Ile Pro Lys Ile Ala Glu Leu Lys Thr Glu
                405                     410                     415
Phe Gln Lys Arg Leu Ser Asp Phe Lys Leu Tyr Glu Ser Glu Leu Thr
                420                     425                     430
Leu Phe Ser Ser Pro Phe Ser Thr Lys Ile Asp Ser Val His Glu Glu
                435                     440                     445
Leu Gln Met Glu Val Ile Asp Leu Gln Cys Asn Thr Val Leu Lys Thr
        450                     455                     460
Lys Tyr Asp Lys Val Gly Ile Pro Glu Phe Tyr Lys Tyr Leu Trp Gly
465                     470                     475                     480
Ser Tyr Pro Lys Tyr Lys His His Cys Ala Lys Ile Leu Ser Met Phe
                485                     490                     495
Gly Ser Thr Tyr Ile Cys Glu Gln Leu Phe Ser Ile Met Lys Leu Ser
                500                     505                     510
Lys Thr Lys Tyr Cys Ser Gln Leu Lys Asp Ser Gln Trp Asp Ser Val
                515                     520                     525
Leu His Ile Ala Thr
        530
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<210> 5039
<211> 3059
<212> DNA
<213> Homo sapiens
```

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<400> 5039
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120
cgcgcgcgga gcgacgccgg gccagcaatg ctgcttggag cctctctggt gggggtgctg
180
ctgttctcca agctggtgct gaaactgccc tggacccagg tgggattctc cctgttgttc
240
ctctacttgg gatctggcgg ctggcgcttc atccgggtct tcatcaagac catcaggcgc
300
gatatctttg cggcctggt cctcctgaag gtgaaggcaa aggtgcgaca gtgcctgcag
360
gagcggcgga cagtgcccat tttgtttgcc tctaccgttc ggcgccaccc cgacaagacg
420
gccctgatct tcgagggcac agatacccac tggaccttcc gccagctgga tgagtactca
480
```

```
agcagtgtag ccaacttcct gcaggcccgg ggcctggcct cgggcgatgt ggctgccatc
540
ttcatggaga accgcaatga gttcgtgggc ctatggctgg gcatggccaa gctcggtgtg
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660
tcgcgcgcac gggcccttgt ctttggcagc gaaatggcct cagccatctg tgaggtccat
720
gccagcccgg acccctcgct cagcctcttc tgctctggct cctgggagcc cggtgcggtg
780
cctccaagca cagaacacct ggaccctctg ctgaaagatg ctcccaagca ccttcccagt
840
tgtcctgaca agggcttcac agataaactg ttctacatct acacatccgg caccacaggg
900
ctgcccaagg ccgccatcgt ggtgcacagc aggtattacc gcatggctgc cctggtgtac
960
tatggattcc gcatgcggcc caacgacatc gtctatgact gcctcccct ctaccactca
1020
gcaggaaaca tcgtgggaat cggccagtgc ctgctgcatg catgacggt ggtgattcgg
1080
aagaagttct cagcctcccg gttctgggac gattgtatca agtacaactg cacgattgtg
1140
cagtacattg gtgaactgtg ccgctacctc ctgaaccagc caccgcggga ggcagaaaac
1200
cagcaccagg ttcgcatggc actaggcaat gcctccggca gtccatctgg accaactttt
1260
ccagccgctt ccacataccc caggtggctg agttctacgg ggccagagtg caactgtagc
1320
ctgggcaact tcgacagcca ggtgggggcc tgtggtttca atagccgcat cctgtccttc
1380
gtgtaccccca tccggttggt acgtgtcaac gaggacacca tggagctgat ccggggggccc
1440
gacggcgtct gcattccctg ccagccaggt gagccgggcc agctggtggg ccgcatcatc
1500
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1560
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1620
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1680
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1740
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1800
gtggccagcc ccactggcaa ctgtgacctg gagcgctttg ctcaggtctt ggagaaggaa
1860
cttcccctgt atgcgcgccc catcttcctg cgcctcctgc ctgagctgca caaacagga
1920
acctacaagt tccagaagac agagctacgg aaggaggcct ttgacccggc tattgtgaag
1980
acccgctgtt ctatctagat gcagaagggc cgctacgtcc cgctggacca agaggcctac
2040
agccgcatcc aggcaggcaa ggagaagctg tgattccccc catccctctg agggccggcg
2100
```

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gatgctggat ccggagcccc aggttccgcc ccagagcggt cctggacaag gccagaccaa
2160
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2220
tgactcattg ccttcccaac ccttccagag gctttctgtg aaagtctcat gtccaagttc
2280
cgtcttctgg gctgggcagg ccctcgggtt cccaggctga gactgacggg ttttctcagg
2340
atgatgtctt gggtgagggt agggagagga caagggtca ccgagccctt cccagagagc
2400
agggagctta taaatggaac cagagcagaa gtccccagac tcaggaagtc aacagagtgg
2460
gcagggacag tggtagcatc catctggtgg ccaaagagaa tcgtagcccc agagctgccc
2520
aagttcactg ggctccaccc ccacctccag gaggggagga gaggacctga catctgaagg
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2640
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2760
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2820
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3059
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```
<210> 5040
<211> 616
<212> PRT
<213> Homo sapiens
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<400> 5040
Met Leu Leu Gly Ala Ser Leu Val Gly Val Leu Leu Phe Ser Lys Leu
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Val Leu Lys Leu Pro Trp Thr Gln Val Gly Phe Ser Leu Leu Phe Leu
            20                  25                  30
Tyr Leu Gly Ser Gly Gly Trp Arg Phe Ile Arg Val Phe Ile Lys Thr
        35                  40                  45
Ile Arg Arg Asp Ile Phe Gly Gly Leu Val Leu Leu Lys Val Lys Ala
        50                  55                  60
Lys Val Arg Gln Cys Leu Gln Glu Arg Arg Thr Val Pro Ile Leu Phe
65                  70                  75                  80
Ala Ser Thr Val Arg Arg His Pro Asp Lys Thr Ala Leu Ile Phe Glu
            85                  90                  95
Gly Thr Asp Thr His Trp Thr Phe Arg Gln Leu Asp Glu Tyr Ser Ser
            100                 105                 110
Ser Val Ala Asn Phe Leu Gln Ala Arg Gly Leu Ala Ser Gly Asp Val
```

4220

```
            115                      120                      125
Ala Ala Ile Phe Met Glu Asn Arg Asn Glu Phe Val Gly Leu Trp Leu
    130                      135                      140
Gly Met Ala Lys Leu Gly Val Glu Ala Ala Leu Ile Asn Thr Asn Leu
145                      150                      155                      160
Arg Arg Asp Ala Leu Leu His Cys Leu Thr Thr Ser Arg Ala Arg Ala
                165                      170                      175
Leu Val Phe Gly Ser Glu Met Ala Ser Ala Ile Cys Glu Val His Ala
                180                      185                      190
Ser Pro Asp Pro Ser Leu Ser Leu Phe Cys Ser Gly Ser Trp Glu Pro
            195                      200                      205
Gly Ala Val Pro Pro Ser Thr Glu His Leu Asp Pro Leu Leu Lys Asp
        210                      215                      220
Ala Pro Lys His Leu Pro Ser Cys Pro Asp Lys Gly Phe Thr Asp Lys
225                      230                      235                      240
Leu Phe Tyr Ile Tyr Thr Ser Gly Thr Thr Gly Leu Pro Lys Ala Ala
                245                      250                      255
Ile Val Val His Ser Arg Tyr Tyr Arg Met Ala Ala Leu Val Tyr Tyr
                260                      265                      270
Gly Phe Arg Met Arg Pro Asn Asp Ile Val Tyr Asp Cys Leu Pro Leu
            275                      280                      285
Tyr His Ser Ala Gly Asn Ile Val Gly Ile Gly Gln Cys Leu Leu His
        290                      295                      300
Gly Met Thr Val Val Ile Arg Lys Lys Phe Ser Ala Ser Arg Phe Trp
305                      310                      315                      320
Asp Asp Cys Ile Lys Tyr Asn Cys Thr Ile Val Gln Tyr Ile Gly Glu
                325                      330                      335
Leu Cys Arg Tyr Leu Leu Asn Gln Pro Pro Arg Glu Ala Glu Asn Gln
            340                      345                      350
His Gln Val Arg Met Ala Leu Gly Asn Ala Ser Gly Ser Pro Ser Gly
            355                      360                      365
Pro Thr Phe Pro Ala Ala Ser Thr Tyr Pro Arg Trp Leu Ser Ser Thr
    370                      375                      380
Gly Pro Glu Cys Asn Cys Ser Leu Gly Asn Phe Asp Ser Gln Val Gly
385                      390                      395                      400
Ala Cys Gly Phe Asn Ser Arg Ile Leu Ser Phe Val Tyr Pro Ile Arg
                405                      410                      415
Leu Val Arg Val Asn Glu Asp Thr Met Glu Leu Ile Arg Gly Pro Asp
            420                      425                      430
Gly Val Cys Ile Pro Cys Gln Pro Gly Glu Pro Gly Gln Leu Val Gly
        435                      440                      445
Arg Ile Ile Gln Lys Asp Pro Leu Arg Arg Phe Asp Gly Tyr Leu Asn
    450                      455                      460
Gln Gly Ala Asn Asn Lys Lys Ile Ala Lys Asp Val Phe Lys Lys Gly
465                      470                      475                      480
Asp Gln Ala Tyr Leu Thr Gly Asp Val Leu Val Met Asp Glu Leu Gly
                485                      490                      495
Tyr Leu Tyr Phe Arg Asp Arg Thr Gly Asp Thr Phe Arg Trp Lys Gly
            500                      505                      510
Glu Asn Val Ser Thr Thr Glu Val Glu Gly Thr Leu Ser Arg Leu Leu
        515                      520                      525
Asp Met Ala Asp Val Ala Val Tyr Gly Val Glu Val Pro Gly Thr Glu
    530                      535                      540
Gly Arg Ala Gly Met Ala Ala Val Ala Ser Pro Thr Gly Asn Cys Asp
```

```
       545                 550                 555                 560
       Leu Glu Arg Phe Ala Gln Val Leu Glu Lys Glu Leu Pro Leu Tyr Ala
                       565                 570                 575
       Arg Pro Ile Phe Leu Arg Leu Leu Pro Glu Leu His Lys Thr Gly Thr
                   580                 585                 590
       Tyr Lys Phe Gln Lys Thr Glu Leu Arg Lys Glu Ala Phe Asp Pro Ala
               595                 600                 605
       Ile Val Lys Thr Arg Cys Ser Ile
           610                 615
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<210> 5041
<211> 2461
<212> DNA
<213> Homo sapiens

<400> 5041
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120
gcctgggatc ccggagcctg cctaggttct gtgcgctccc gcccaggccg gtgcccgccg
180
cccgcctgcg ccccaggcag gtcccaggcc tccggctgct cccggccgaa ggtggggaca
240
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360
cccgagtgcg agatcgagcg tcctgagcgc ctgaccgcag ccctggatcg cctgcggcag
420
cgcggcctgg aacagaggtg tctgcggttg tcagcccgcg aggcctcgga agaggagctg
480
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600
cactgcgcgc ggctggccgc aggggctgga ctgcagctgg tggacgctgt gctcactgga
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720
gccaacgggt tctgcgtgtt caacaacgtg gccatagcag ctgcacatgc caagcagaaa
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840
tatctctttg aggatgaccc cagcgtcctt tacttctcct ggcaccgcta tgagcatggg
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960
ggcttcactg tcaacctgcc ctggaaccag gttgggatgg aaacgctga ctacgtggct
1020
gccttcctgc acctgctgct cccactggcc tttgagtttg accctgagct ggtgctggtc
1080
tcggcaggat ttgactcagc catcggggac cctgaggggc aaatgcaggc cacgccagag
1140
```

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tgcttcgccc acctcacaca gctgctgcag gtgctggccg gcggccgggt ctgtgccgtg
1200
ctggagggcg gctaccacct ggagtcactg gcggagtcag tgtgcatgac agtacagacg
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1320
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1380
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acaacgccgg atatcacatt ggttctgccc cctgacgtca tccaacagga agcgtcagcc
1620
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1680
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2220
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2280
cagtggaaga tgttgcagtg ccatcctcac ctggtggctt gaaatcggcc aaggtgggag
2340
catttacacc gcagaaatga caccgcacgc cagcgccccg cggccgcgat ccggacccca
2400
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2460
c
2461


<210> 5042
<211> 686
<212> PRT
<213> Homo sapiens

<400> 5042
Arg Gly Arg Leu Gly Thr Gln Gly Asp His Gly Ala Ala Met Gly Thr
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1                  5                    10                   15
Ala Leu Val Tyr His Glu Asp Met Thr Ala Thr Arg Leu Leu Trp Asp
            20                   25                   30
Asp Pro Glu Cys Glu Ile Glu Arg Pro Glu Arg Leu Thr Ala Ala Leu
            35                   40                   45
Asp Arg Leu Arg Gln Arg Gly Leu Glu Gln Arg Cys Leu Arg Leu Ser
       50                   55                   60
Ala Arg Glu Ala Ser Glu Glu Glu Leu Gly Leu Val His Ser Pro Glu
65                   70                   75                   80
Tyr Val Ser Leu Val Arg Glu Thr Gln Val Leu Gly Lys Glu Glu Leu
                 85                   90                   95
Gln Ala Leu Ser Gly Gln Phe Asp Ala Ile Tyr Phe His Pro Ser Thr
            100                  105                  110
Phe His Cys Ala Arg Leu Ala Ala Gly Ala Gly Leu Gln Leu Val Asp
            115                  120                  125
Ala Val Leu Thr Gly Ala Val Gln Asn Gly Leu Ala Leu Val Arg Pro
       130                  135                  140
Pro Gly His His Gly Gln Arg Ala Ala Ala Asn Gly Phe Cys Val Phe
145                  150                  155                  160
Asn Asn Val Ala Ile Ala Ala Ala His Ala Lys Gln Lys His Gly Leu
                 165                  170                  175
His Arg Ile Leu Val Val Asp Trp Asp Val His His Gly Gln Gly Ile
            180                  185                  190
Gln Tyr Leu Phe Glu Asp Asp Pro Ser Val Leu Tyr Phe Ser Trp His
       195                  200                  205
Arg Tyr Glu His Gly Arg Phe Trp Pro Phe Leu Arg Glu Ser Asp Ala
       210                  215                  220
Asp Ala Val Gly Arg Gly Gln Gly Leu Gly Phe Thr Val Asn Leu Pro
225                  230                  235                  240
Trp Asn Gln Val Gly Met Gly Asn Ala Asp Tyr Val Ala Ala Phe Leu
                 245                  250                  255
His Leu Leu Leu Pro Leu Ala Phe Glu Phe Asp Pro Glu Leu Val Leu
            260                  265                  270
Val Ser Ala Gly Phe Asp Ser Ala Ile Gly Asp Pro Glu Gly Gln Met
            275                  280                  285
Gln Ala Thr Pro Glu Cys Phe Ala His Leu Thr Gln Leu Leu Gln Val
       290                  295                  300
Leu Ala Gly Gly Arg Val Cys Ala Val Leu Glu Gly Gly Tyr His Leu
305                  310                  315                  320
Glu Ser Leu Ala Glu Ser Val Cys Met Thr Val Gln Thr Leu Leu Gly
            325                  330                  335
Asp Pro Ala Pro Pro Leu Ser Gly Pro Met Ala Pro Cys Gln Arg Cys
            340                  345                  350
Glu Gly Ser Ala Leu Glu Ser Ile Gln Ser Ala Arg Ala Ala Gln Ala
       355                  360                  365
Pro His Trp Lys Ser Leu Gln Gln Gln Asp Val Thr Ala Val Pro Met
       370                  375                  380
Ser Pro Ser Ser His Ser Pro Glu Gly Arg Pro Pro Pro Leu Leu Pro
385                  390                  395                  400
Gly Gly Pro Val Cys Lys Ala Ala Ala Ser Ala Pro Ser Ser Leu Leu
            405                  410                  415
Asp Gln Pro Cys Leu Cys Pro Ala Pro Ser Val Arg Thr Ala Val Ala
            420                  425                  430
Leu Thr Thr Pro Asp Ile Thr Leu Val Leu Pro Pro Asp Val Ile Gln
```

```
            435                    440                    445
Gln Glu Ala Ser Ala Leu Arg Glu Glu Thr Glu Ala Trp Ala Arg Pro
    450                    455                    460
His Glu Ser Leu Ala Arg Glu Glu Ala Leu Thr Ala Leu Gly Lys Leu
465                    470                    475                    480
Leu Tyr Leu Leu Asp Gly Met Leu Asp Gly Gln Val Asn Ser Gly Ile
            485                    490                    495
Ala Ala Thr Pro Ala Ser Ala Ala Ala Thr Leu Asp Val Ala Val
            500                    505                    510
Arg Arg Gly Leu Ser His Gly Ala Gln Arg Leu Leu Cys Val Ala Leu
            515                    520                    525
Gly Gln Leu Asp Arg Pro Pro Asp Leu Ala His Asp Gly Arg Ser Leu
    530                    535                    540
Trp Leu Asn Ile Arg Gly Lys Glu Ala Ala Ala Leu Ser Met Phe His
545                    550                    555                    560
Val Ser Thr Pro Leu Pro Val Met Thr Gly Gly Phe Leu Ser Cys Ile
            565                    570                    575
Leu Gly Leu Val Leu Pro Leu Ala Tyr Gly Phe Gln Pro Asp Leu Val
            580                    585                    590
Leu Val Ala Leu Gly Pro Gly His Gly Leu Gln Gly Pro His Ala Ala
            595                    600                    605
Leu Leu Ala Ala Met Leu Arg Gly Leu Ala Gly Gly Arg Val Leu Ala
    610                    615                    620
Leu Leu Glu Glu Asn Ser Thr Pro Gln Leu Ala Gly Ile Leu Ala Arg
625                    630                    635                    640
Val Leu Asn Gly Glu Ala Pro Pro Ser Leu Gly Pro Ser Ser Val Ala
            645                    650                    655
Ser Pro Glu Asp Val Gln Ala Leu Met Tyr Leu Arg Gly Gln Leu Glu
            660                    665                    670
Pro Gln Trp Lys Met Leu Gln Cys His Pro His Leu Val Ala
    675                    680                    685
```

<210> 5043
<211> 1824
<212> DNA
<213> Homo sapiens

<400> 5043
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gccggtggca cgacagttgc tgcagggaat cttttaaacg agagcgagaa ggactgcggg
60
caggaccggc gggctcctgg ggttcagccg tgccgcctcg ttacgatgac cagtgtggtt
120
aagacagtgt atagcctgca gccccctct gcgctgagcg cggccagcc ggcagacaca
180
caaactcggg ccacttctaa gagtctctta cctgttaggt ccaaagaagt cgatgtttcc
240
aaacagcttc attcaggagg tccagagaat gatgttacaa aaatcaccaa actgagacga
300
gagaatgggc aaatgaaagc tactgacact gccaccagaa ggaatgtcag aaaaggctac
360
aaaccactga gtaagcaaaa atcagaggaa gagctcaagg acaagaacca gctgttagaa
420
gccgtcaaca agcagttgca ccagaagttg actgaaactc agggagagct gaaggacctg
480
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acccagaagg tagagctgct ggagaagttt cgggacaact gtttggcaat tttggagagc
540
aagggccttg atccagcttt aggcagtgag accctggcat cacgacaaga atccactact
600
gatcacatgg actctatgtt gctgttagaa actttgcaag aggagctgaa gctttttaac
660
gaaacagcca aaaagcagat ggaggagtta caggccttaa aggtaaagct ggagatgaaa
720
gaggaaagag tccgattcct agaacagcaa accttatgta acaatcaagt aaatgattta
780
acaacagccc ttaaggaaat ggagcagcta ttagaaatgt aagaagaagc aagtggccag
840
atggctccct cttgggcata aaatctcaga ggaagctact taggacatca tcttggccat
900
gatcttctgg gactcaccat ctccagaatg aaaacaattt ctacagtaga cttaaggaca
960
gtttatgctg aaatggcaat tcctcattta agcaagtttt cccaaccttc aggttggtca
1020
gccctcctga gcctcacagg tggataattg aggcctacaa gagaggggag cctaggagct
1080
tggattgacc ttctagtcaa ccacctgact tcagcacacc attacaatcg ggagactaaa
1140
ccaacaacca gaggatctaa aatgtcacat tcagattttc aggaagaaaa tcttcattac
1200
agtggagcac aaatgttcca tacaagacat cattgaggag ccatgctgtc cccttctaac
1260
ctgaaacaca ttctttccca tcctggttgg gcttctgtac ctccttatta atttatgaac
1320
ctgaagttgc ttgaagtgtt ttgggcttaa taaatggggt gaaagtatag gtagcagtaa
1380
cacctacatg aaacaataca ccttggatct tttaatctaa attacttttc ttttttaagt
1440
ctacttttaa aataaatact tctgtaaata ttctgactgt aacattgaga aatgaaaata
1500
gcctttttaac ctagatatgt cagttgatca ttattgaact aatttagtta acaagtccaa
1560
gatattctga cttaatctag aatattttttc tgctactctt taagagtcct gtggctagtc
1620
cctctgtctc ccaagagcat tggctagtct cctgagggtg ttgcccattt gtagcagtgg
1680
tttcaccagg tctgtggcca cttgctgccc atgtttttccc tgcactccag cctgggtgac
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1800
aaaatagttg aaatggcaaa cttt
1824

<210> 5044
<211> 273
<212> PRT
<213> Homo sapiens

<400> 5044
Ala Gly Gly Thr Thr Val Ala Ala Gly Asn Leu Leu Asn Glu Ser Glu

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  1                   5                      10                     15
Lys Asp Cys Gly Gln Asp Arg Arg Ala Pro Gly Val Gln Pro Cys Arg
            20                      25                     30
Leu Val Thr Met Thr Ser Val Val Lys Thr Val Tyr Ser Leu Gln Pro
            35                      40                     45
Pro Ser Ala Leu Ser Gly Gly Gln Pro Ala Asp Thr Gln Thr Arg Ala
        50                  55                  60
Thr Ser Lys Ser Leu Leu Pro Val Arg Ser Lys Glu Val Asp Val Ser
65                      70                  75                  80
Lys Gln Leu His Ser Gly Gly Pro Glu Asn Asp Val Thr Lys Ile Thr
                85                  90                      95
Lys Leu Arg Arg Glu Asn Gly Gln Met Lys Ala Thr Asp Thr Ala Thr
            100                     105                    110
Arg Arg Asn Val Arg Lys Gly Tyr Lys Pro Leu Ser Lys Gln Lys Ser
            115                     120                    125
Glu Glu Glu Leu Lys Asp Lys Asn Gln Leu Leu Glu Ala Val Asn Lys
        130                 135                 140
Gln Leu His Gln Lys Leu Thr Glu Thr Gln Gly Glu Leu Lys Asp Leu
145                     150                 155                 160
Thr Gln Lys Val Glu Leu Leu Glu Lys Phe Arg Asp Asn Cys Leu Ala
                165                 170                     175
Ile Leu Glu Ser Lys Gly Leu Asp Pro Ala Leu Gly Ser Glu Thr Leu
                180                 185                 190
Ala Ser Arg Gln Glu Ser Thr Thr Asp His Met Asp Ser Met Leu Leu
            195                 200                 205
Leu Glu Thr Leu Gln Glu Glu Leu Lys Leu Phe Asn Glu Thr Ala Lys
        210                 215                 220
Lys Gln Met Glu Glu Leu Gln Ala Leu Lys Val Lys Leu Glu Met Lys
225                 230                 235                 240
Glu Glu Arg Val Arg Phe Leu Glu Gln Gln Thr Leu Cys Asn Asn Gln
                245                 250                     255
Val Asn Asp Leu Thr Thr Ala Leu Lys Glu Met Glu Gln Leu Leu Glu
            260                 265                 270
Met
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```
<210> 5045
<211> 462
<212> DNA
<213> Homo sapiens

<400> 5045
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aaatataaaa atctggactg ggattgaaga ttgtgtttac aaatgctttt gaataggatt
120
tctcctgcag ttgttacgta gcttttcaga aacacacaaa ctacaaataa tgaacaacat
180
ctgcaatgat tcggcagggt ggcagcatcc acgctctcca cccaaaccct ggtgggattt
240
ggagaggccg ctggtgggca gaggttggcc ctaagcatgg cagcctccgg cttactgcac
300
ccagcctgtg gggcggctca gtagcccgtg acatggtggc ctgttgtctc ttctcttgtt
360
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ctagtaagca ctatcctttg tactccctca acgtggcctc catgtggttg aagctaggga
420
gactctacat gggcctggaa cacaaagccg ctaggatga aa
462

<210> 5046
<211> 92
<212> PRT
<213> Homo sapiens

<400> 5046
Met Ile Arg Gln Gly Gly Ser Ile His Ala Leu His Pro Asn Pro Gly
 1   5   10   15
Gly Ile Trp Arg Gly Arg Trp Trp Ala Glu Val Gly Pro Lys His Gly
                20   25   30
Ser Leu Arg Leu Thr Ala Pro Ser Leu Trp Gly Gly Ser Val Ala Arg
            35   40   45
Asp Met Val Ala Cys Cys Leu Phe Ser Cys Ser Ser Lys His Tyr Pro
        50   55   60
Leu Tyr Ser Leu Asn Val Ala Ser Met Trp Leu Lys Leu Gly Arg Leu
65   70   75   80
Tyr Met Gly Leu Glu His Lys Ala Ala Arg Asp Glu
                85   90

<210> 5047
<211> 3380
<212> DNA
<213> Homo sapiens

<400> 5047
gggtcgcggt cctcggagcg cttctgcagc ccgggcaaag gccggnngct gcgggctctg
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cagcccttcc aggtggggga cttgctgttc tcctgcccgg cctatgccta cgtgctcacg
120
gtcaacgagc ggggcaacca ctgcgagtac tgcttcacca ggaaagaagg attgtccaaa
180
tgtggaagat gcaagcaggc attttactgc aatgtggagt gtcagaaaga agattggccc
240
atgcacaagc tggaatgttc tcccatggtt gtttttgggg aaaactggaa tccctcggag
300
actgtaagac taacagcaag gattctggcc aaacagaaaa tccacccaga gagaacacct
360
tcggaaaaat tgttagctgt gaaggagttt gaatcacatc tggataagtt agacaatgag
420
aagaaggatt tgattcagag tgacatagct gctctccatc acttttactc caagcatctc
480
gaattccctg acaatgatag cctcgtagta ctctttgcac aggttaactg taatggcttc
540
acaattgaag atgaagaact ttctcatttg ggatcagcga tatttcctga tgttgcattg
600
atgaatcata gctgttgccc caatgtcatt gtgacctaca aagggaccct ggcagaagtc
660
agagctgtac aggaaatcaa gccgggagag gaggttttta ccagctatat tgatctcctg
720

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tacccaacgg aagatagaaa tgaccggtta agagattctt atttctttac ctgtgagtgc
780
caggagtgta ccaccaagga caaggataag gccaaggtgg aaatccggaa gctcagcgat
840
cccccaaagg cagaagccat ccgagacatg gtcagatatg cacgcaacgt cattgaagag
900
ttccggaggg ccaagcacta taaatcccct agtgagctgc tggagatctg cgagctcagc
960
caggagaaga tgagctctgt gtttgaggac agtaacgtgt acatgttgca catgatgtac
1020
caggccatgg gtgtctgctt gtacatgcag gactgggaag gagccctgca atatggacag
1080
aaaatcatta agccctacag taagcactat cctttgtact ccctcaacgt ggcctccatg
1140
tggttgaagc tagggagact ctacatgggc ctggaacaca agccgcagg ggagaaagcc
1200
ctgaagaagg ccattgcaat catggaagta gctcacggca aagatcatcc atatatttct
1260
gagatcaaac aggaaattga aagccactga aactatgcag catttcagtt ttcatttaaa
1320
cacttagttc agaaacctta aaggatttga atatttcaaa ttgcacacgt cactccagca
1380
tctctgtaaa ataattggaa tgaaaatact tcttgcactt aaacactgca catgccgtac
1440
tttgaggtta gtctgaatct tgaactttaa taccaaatta attttgaatg cttttgtttc
1500
ctaagagata atggcatggt ttcatatgtt atactttgga cagacagagt tttaaaaatg
1560
gaattatttt ttctttcatg cctcttgtaa tgttctgaac aaacttgaat gatgaaagta
1620
ttaaagagat atcagtattt gaggtttgta ttttcttctg tctctgggga ggatttctca
1680
gtggtggtgg gagcccagtc ttggagtgaa agtgacacct gctgtccata attcagcaag
1740
ctcaagtctt ctccatggga ctggggtcgg gcagcctctt tattctgcag ttgctcttgt
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1860
aaaactatca tctatctgtg gtggaggaac agtccagtga cccaagtgcc ctccagcagg
1920
cgaggttttg aatctgttct ctggtgcctg gtattccttc agtgtgtaaa ggtgcttagt
1980
gcgtgctttg ctttcttggc ttttctgtcc ccatctgtct gaaagcagac ttgccatctc
2040
tcattctgtt gattgttctg tgcagtactc tcctttttgg aaaaactcca gggtatgctt
2100
gggaaggaaa aaaattttt tccttaccaa ccaacgctgt gttgttgagt aaacactgat
2160
ctctacccac acagacaaca ggaatccagc tttctgcagc cccacagcct agacagcagc
2220
aacctgggga gttgtttgtt agcaaccatt gcacagaagg acgcagcaca cgttcctgag
2280
tgcaggggtg ttactcttag aaaagcgtct tgtagtcgaa agagaggaac ttccccactg
2340
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4229

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gttaataagt aaagcctgtt gaaatttaca tgtcaattac ctttcatagt catggtccga
2400
aaacagctag aacagctgta aatctggtac attttccttc cctcctcatc tacacgcacc
2460
cacatcttca cacacactca tgccctctt tcacacgcag tttgctgcac acagtgggat
2520
ttagcagata gaatgcattc tcttgtcctg tgtagtccaa taagacattt actgaacacc
2580
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2640
atggtcccag atcagtggaa cttaggtttt aagaatgttc atttactata cattctgtga
2700
cgaagcctaa aataaactta gcctaccatc tctataggtt ttataaaatt tgcaaaagta
2760
atcctttctc agtaaattca agtaatggaa atgtatatga aaaaagtaaa cttctttgtt
2820
cttcaccagt cccactgcgt ggagctaact gccataaaca gtttgcttta tatggtccca
2880
ggttttttcca ttcctggatg atgatgtagc tatataaata gatttagaag aacaaagaca
2940
ggatggtact gacataggat tttgtaacgt gcttctccaa acgaacaaaa tggatctctt
3000
tgcatttcag cacttacaga tttgcctcat tctatttaga ggcagaatat tgcattggat
3060
gcatgtcatc atggactcgg tacttctatt tatggacagg aggttttttt tcccagtttg
3120
ctgctattac aaacaatgcc acaatgaatg atctgaaaca taaaactttg cgttgtgtgg
3180
tagcattttg gggaatagat tcctggaagt gcaatttcaa gatccaatag tgggaatatt
3240
tttaaaattt gaataaatat agccacattt ccttttgtaa aaaaaaaaaa aaaactgcat
3300
cagatacaaa taagatagat ataatagtat ttgctttcct ctccctcata acgttgtatt
3360
atcattaaaa tgttttggc
3380
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<210> 5048
<211> 429
<212> PRT
<213> Homo sapiens

<400> 5048
Gly Ser Arg Ser Ser Glu Arg Phe Cys Ser Pro Gly Lys Gly Arg Xaa
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Leu Arg Ala Leu Gln Pro Phe Gln Val Gly Asp Leu Leu Phe Ser Cys
            20                  25                  30
Pro Ala Tyr Ala Tyr Val Leu Thr Val Asn Glu Arg Gly Asn His Cys
        35                  40                  45
Glu Tyr Cys Phe Thr Arg Lys Glu Gly Leu Ser Lys Cys Gly Arg Cys
    50                  55                  60
Lys Gln Ala Phe Tyr Cys Asn Val Glu Cys Gln Lys Glu Asp Trp Pro
65                  70                  75                  80
Met His Lys Leu Glu Cys Ser Pro Met Val Val Phe Gly Glu Asn Trp
```

4230

```
                     85                      90                      95
Asn Pro Ser Glu Thr Val Arg Leu Thr Ala Arg Ile Leu Ala Lys Gln
            100                     105                     110
Lys Ile His Pro Glu Arg Thr Pro Ser Glu Lys Leu Leu Ala Val Lys
            115                     120                     125
Glu Phe Glu Ser His Leu Asp Lys Leu Asp Asn Glu Lys Lys Asp Leu
    130                     135                     140
Ile Gln Ser Asp Ile Ala Ala Leu His His Phe Tyr Ser Lys His Leu
145                     150                     155                     160
Glu Phe Pro Asp Asn Asp Ser Leu Val Val Leu Phe Ala Gln Val Asn
                165                     170                     175
Cys Asn Gly Phe Thr Ile Glu Asp Glu Glu Leu Ser His Leu Gly Ser
            180                     185                     190
Ala Ile Phe Pro Asp Val Ala Leu Met Asn His Ser Cys Cys Pro Asn
            195                     200                     205
Val Ile Val Thr Tyr Lys Gly Thr Leu Ala Glu Val Arg Ala Val Gln
            210                     215                     220
Glu Ile Lys Pro Gly Glu Glu Val Phe Thr Ser Tyr Ile Asp Leu Leu
225                     230                     235                     240
Tyr Pro Thr Glu Asp Arg Asn Asp Arg Leu Arg Asp Ser Tyr Phe Phe
                245                     250                     255
Thr Cys Glu Cys Gln Glu Cys Thr Thr Lys Asp Lys Asp Lys Ala Lys
            260                     265                     270
Val Glu Ile Arg Lys Leu Ser Asp Pro Pro Lys Ala Glu Ala Ile Arg
            275                     280                     285
Asp Met Val Arg Tyr Ala Arg Asn Val Ile Glu Glu Phe Arg Arg Ala
    290                     295                     300
Lys His Tyr Lys Ser Pro Ser Glu Leu Leu Glu Ile Cys Glu Leu Ser
305                     310                     315                     320
Gln Glu Lys Met Ser Ser Val Phe Glu Asp Ser Asn Val Tyr Met Leu
                325                     330                     335
His Met Met Tyr Gln Ala Met Gly Val Cys Leu Tyr Met Gln Asp Trp
            340                     345                     350
Glu Gly Ala Leu Gln Tyr Gly Gln Lys Ile Ile Lys Pro Tyr Ser Lys
            355                     360                     365
His Tyr Pro Leu Tyr Ser Leu Asn Val Ala Ser Met Trp Leu Lys Leu
    370                     375                     380
Gly Arg Leu Tyr Met Gly Leu Glu His Lys Ala Ala Gly Glu Lys Ala
385                     390                     395                     400
Leu Lys Lys Ala Ile Ala Ile Met Glu Val Ala His Gly Lys Asp His
                405                     410                     415
Pro Tyr Ile Ser Glu Ile Lys Gln Glu Ile Glu Ser His
            420                     425
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<210> 5049
<211> 2422
<212> DNA
<213> Homo sapiens

<400> 5049
nagatcttct cgcagcgcat ctccccttcc atcgattaca cctatgacag cgacatactg
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aagggcaact tctcaatccg tacagccaag atgcagcagc atgtgtgtga aaccatcatc
120

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cgcatcttta aaagacatgg agctgttcag ttgtgtactc cactactgct tccccgaaac
180
agacaaatat atgagcacaa cgaatctgcc ctattcatgg accacagcgg gatgctggtg
240
atgcttcctt ttgacctgcg gatccctttt gcaagatatg tggcaagaaa taatatattg
300
aatttaaaac gatactgcat agaacgtgtg ttcaggccgc gcaagttaga tcgatttcat
360
cccaaagaac ttctggagtg tgcatttgat attgtcactt ctaccaccaa cagctttctg
420
cccactgctg aaattatcta cactatctat gaaatcatcc aagagtttcc agcacttcag
480
gaaagaaatt acagtattta tttgaaccat accatgttat tgaaagcaat actcttacac
540
tgtgggatcc cagaagataa actcagtcaa gtctacatta ttctgtatga tgctgtgaca
600
gagaagctga cgaggagaga agtggaagct aaattttgta atctgtctgt gtcttctaat
660
agtnctgtgt cgactctaca angtttattg aacagaaggg agattnntgc aagatcttat
720
gccaacaatn naaattcatt aataaaacag aaaacaggta ttgcacagtt ggtgaagtat
780
ggcttaaaag acctagagga ggttgttgga ctgttgaaga aactcggcat caagttacag
840
gtcttgatca atttgggctt ggtttacaag gtgcagcagc acaatggaat catcttccag
900
tttgtggctt tcatcaaacg aaggcaaagg gctgtacctg aaatcctcgc agctggaggc
960
agatatgacc tgctgattcc ccagtttaga gggccacaag ctctgggggc agttcccact
1020
gccattgggg tcagcatagc tatagacaag atatctgctg ctgtcctcaa catggaggaa
1080
tctgttacaa taagctcttg tgacctcctg gttgtaagtg ttggtcagat gtctatgtcc
1140
agggccatca acctaaccca gaaactctgg acagcaggca tcacagcaga aatcatgtac
1200
gactggtcac agtcccaaga ggaattacaa gagtactgca gacatcatga aatcacctat
1260
gtggcccttg tctcggataa agaaggaagc catgtcaagg ttaagtcttt cgagaaggaa
1320
aggcagacag agaagcgtgt gctggagact gaacttgtgg accatgtact gcagaaactg
1380
aggactaaag tcactgatga aaggaatggc agagaagctt ccgataatct tgcagtgcaa
1440
aatctgaagg ggtcattttc taatgcttca ggtttgtttg aaatccatgg agcaacagtg
1500
gttcccattg tgagtgtgct agccccggag aagctgtcag ccagcactag gaggcgctat
1560
gaaactcagg tacaaactcg acttcagacc tcccttgcca acttacatca gaaaagcagt
1620
gaaattgaaa ttctggctgt ggatctaccc aaagaaacaa tattacagtt tttatcatta
·1680
gagtgggatg ctgatgaaca ggcatttaac acaactgtga agcagctgct gtcacgcctg
1740
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4232

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ccaaagcaaa gatacctcaa attagtctgt gatgaaattt ataacatcaa agtagaaaaa
1800
aaggtgtctg tgctatttct gtacagctat agagatgact actacagaat cttattttaa
1860
ccctaaagaa ctgtcgttaa cctcattcaa acagacagag gcttatactg gaataatgga
1920
atgttgtaca ttcatcataa tttaaaatta aattctaaga agaggctggg tgcagtggct
1980
cacaccttta atcccagcac tttgggaagc caaggcagga agactgcttg aaaccaggag
2040
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2100
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2160
gagcctcagg aggttgaggc tgcagtgagc tgtgactgcg ccactgcact ccagtctggg
2220
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2280
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2400
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2422


<210> 5050
<211> 619
<212> PRT
<213> Homo sapiens

<400> 5050
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Ser Asp Ile Leu Lys Gly Asn Phe Ser Ile Arg Thr Ala Lys Met Gln
            20                  25                  30
Gln His Val Cys Glu Thr Ile Ile Arg Ile Phe Lys Arg His Gly Ala
            35                  40                  45
Val Gln Leu Cys Thr Pro Leu Leu Leu Pro Arg Asn Arg Gln Ile Tyr
        50                  55                  60
Glu His Asn Glu Ser Ala Leu Phe Met Asp His Ser Gly Met Leu Val
65                  70                  75                  80
Met Leu Pro Phe Asp Leu Arg Ile Pro Phe Ala Arg Tyr Val Ala Arg
                85                  90                  95
Asn Asn Ile Leu Asn Leu Lys Arg Tyr Cys Ile Glu Arg Val Phe Arg
                100                 105                 110
Pro Arg Lys Leu Asp Arg Phe His Pro Lys Glu Leu Leu Glu Cys Ala
            115                 120                 125
Phe Asp Ile Val Thr Ser Thr Thr Asn Ser Phe Leu Pro Thr Ala Glu
            130                 135                 140
Ile Ile Tyr Thr Ile Tyr Glu Ile Ile Gln Glu Phe Pro Ala Leu Gln
145                 150                 155                 160
Glu Arg Asn Tyr Ser Ile Tyr Leu Asn His Thr Met Leu Leu Lys Ala
                165                 170                 175
Ile Leu Leu His Cys Gly Ile Pro Glu Asp Lys Leu Ser Gln Val Tyr
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4233

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                    180                    185                    190
Ile Ile Leu Tyr Asp Ala Val Thr Glu Lys Leu Thr Arg Arg Glu Val
        195                    200                    205
Glu Ala Lys Phe Cys Asn Leu Ser Val Ser Ser Asn Ser Xaa Val Ser
    210                    215                    220
Thr Leu Gln Xaa Leu Leu Asn Arg Arg Glu Ile Xaa Ala Arg Ser Tyr
225                    230                    235                    240
Ala Asn Asn Xaa Asn Ser Leu Ile Lys Gln Lys Thr Gly Ile Ala Gln
                245                    250                    255
Leu Val Lys Tyr Gly Leu Lys Asp Leu Glu Glu Val Val Gly Leu Leu
            260                    265                    270
Lys Lys Leu Gly Ile Lys Leu Gln Val Leu Ile Asn Leu Gly Leu Val
            275                    280                    285
Tyr Lys Val Gln Gln His Asn Gly Ile Ile Phe Gln Phe Val Ala Phe
        290                    295                    300
Ile Lys Arg Arg Gln Arg Ala Val Pro Glu Ile Leu Ala Ala Gly Gly
305                    310                    315                    320
Arg Tyr Asp Leu Leu Ile Pro Gln Phe Arg Gly Pro Gln Ala Leu Gly
                325                    330                    335
Pro Val Pro Thr Ala Ile Gly Val Ser Ile Ala Ile Asp Lys Ile Ser
            340                    345                    350
Ala Ala Val Leu Asn Met Glu Glu Ser Val Thr Ile Ser Ser Cys Asp
        355                    360                    365
Leu Leu Val Val Ser Val Gly Gln Met Ser Met Ser Arg Ala Ile Asn
    370                    375                    380
Leu Thr Gln Lys Leu Trp Thr Ala Gly Ile Thr Ala Glu Ile Met Tyr
385                    390                    395                    400
Asp Trp Ser Gln Ser Gln Glu Glu Leu Gln Glu Tyr Cys Arg His His
                405                    410                    415
Glu Ile Thr Tyr Val Ala Leu Val Ser Asp Lys Glu Gly Ser His Val
            420                    425                    430
Lys Val Lys Ser Phe Glu Lys Glu Arg Gln Thr Glu Lys Arg Val Leu
        435                    440                    445
Glu Thr Glu Leu Val Asp His Val Leu Gln Lys Leu Arg Thr Lys Val
    450                    455                    460
Thr Asp Glu Arg Asn Gly Arg Glu Ala Ser Asp Asn Leu Ala Val Gln
465                    470                    475                    480
Asn Leu Lys Gly Ser Phe Ser Asn Ala Ser Gly Leu Phe Glu Ile His
                485                    490                    495
Gly Ala Thr Val Val Pro Ile Val Ser Val Leu Ala Pro Glu Lys Leu
            500                    505                    510
Ser Ala Ser Thr Arg Arg Arg Tyr Glu Thr Gln Val Gln Thr Arg Leu
        515                    520                    525
Gln Thr Ser Leu Ala Asn Leu His Gln Lys Ser Ser Glu Ile Glu Ile
    530                    535                    540
Leu Ala Val Asp Leu Pro Lys Glu Thr Ile Leu Gln Phe Leu Ser Leu
545                    550                    555                    560
Glu Trp Asp Ala Asp Glu Gln Ala Phe Asn Thr Thr Val Lys Gln Leu
                565                    570                    575
Leu Ser Arg Leu Pro Lys Gln Arg Tyr Leu Lys Leu Val Cys Asp Glu
            580                    585                    590
Ile Tyr Asn Ile Lys Val Glu Lys Lys Val Ser Val Leu Phe Leu Tyr
        595                    600                    605
Ser Tyr Arg Asp Asp Tyr Tyr Arg Ile Leu Phe
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610   615

<210> 5051
<211> 4125
<212> DNA
<213> Homo sapiens

<400> 5051
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120
gtggagagat gtaccaccct gcatcagctt ttaccctaca gaaggaaatc agcgttccat
180
tatattttat tgttatcaac agtttaggaa tacatagctt tgcttttgcc ttttttcttc
240
cttccccttg tttcccctcg cctcagagaa aagaaggaaa aaaaaattca tctttcctac
300
ccccctcttt ttggatgata ggacttgaag acaatctgaa ataccacata aactcacttc
360
cagatgtttt ttgtttcata tgcaattgaa ttgggctcag actgtgtttt taagctgtat
420
ggtaaaaata tcactgtctt ctagggcctt attggggggc agggagagac gtgacacttt
480
gtcagaaggg attgagtctg ctaacttaaa ctttccttga ttcaggaata caaagtctcc
540
agctgtgaac agagactcat cagtgaaata gagtacaggc tagaaaggtc tcctgtggat
600
gaatcaggtg atgaattcac gtatggagat gtgcctgtgg aaaacggaat ggcaccattc
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720
agagtggctg gaaatccaaa gccaaagatc tattggttta agatgggaa gcagatctct
780
ccaaagagtg atcactacac cattcaaaga gatctcgatg ggacctgctc cctccatacc
840
acagcctcca ccctagatga tgatgggaat tatacaatta tggctgcaaa ccctcagggc
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960
cggtctccct caggccatcc tcatgtcaga aggcctcgtt ctagatcaag ggacagtgga
1020
gacgaaaatg aaccaattca ggagcgattc ttcagacctc acttcttgca ggctcctgga
1080
gatctgactg ttcaagaagg aaaactctgc agaatggact gcaaagtcag tgggttacca
1140
accccagatc taagctggca actagatgga aagcccgtac gccctgacag tgctcacaag
1200
atgctggtgc gtgagaacgg ggtgcactct ctgatcatag agccagtcac gtcacgtgat
1260
gccggcatct acacatgtat agctaccaac cgagcaggac agaactcatt cagcctggag
1320
cttgtggttg ctgctaaaga agcacacaaa cccctgtgt ttattgagaa gctccaaaac
1380

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1440
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1560
gctgggtggt atactgtgtc agccaagaat gaagcaggga ttgtgtcctg tactgccagg
1620
ctggacgttt acacccagtg gcatcagcag tcacagagca ccaagccaaa aaaagtacgg
1680
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1740
caacctgagg ccaacccatc tcacctgaca ctgaatactg ccttggtaga aagtgaggac
1800
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1860
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1920
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1980
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2100
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2160
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2520
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2580
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2940
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3000
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3120
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3780
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3900
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4020
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4125

<210> 5052
<211> 433
<212> PRT
<213> Homo sapiens

<400> 5052
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Arg Leu Ile Ser Glu Ile Glu Tyr Arg Leu Glu Arg Ser Pro Val Asp
            20   25   30
Glu Ser Gly Asp Glu Phe Thr Tyr Gly Asp Val Pro Val Glu Asn Gly
        35   40   45
Met Ala Pro Phe Phe Glu Met Lys Leu Lys His Tyr Lys Ile Phe Glu
    50   55   60
Gly Met Pro Val Thr Phe Thr Cys Arg Val Ala Gly Asn Pro Lys Pro

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65                    70                    75                    80
Lys Ile Tyr Trp Phe Lys Asp Gly Lys Gln Ile Ser Pro Lys Ser Asp
                85                    90                    95
His Tyr Thr Ile Gln Arg Asp Leu Asp Gly Thr Cys Ser Leu His Thr
            100                   105                   110
Thr Ala Ser Thr Leu Asp Asp Asp Gly Asn Tyr Thr Ile Met Ala Ala
            115                   120                   125
Asn Pro Gln Gly Arg Ile Ser Cys Thr Gly Arg Leu Met Val Gln Ala
    130                   135                   140
Val Asn Gln Arg Gly Arg Ser Pro Arg Ser Pro Ser Gly His Pro His
145                   150                   155                   160
Val Arg Arg Pro Arg Ser Arg Ser Arg Asp Ser Gly Asp Glu Asn Glu
                165                   170                   175
Pro Ile Gln Glu Arg Phe Phe Arg Pro His Phe Leu Gln Ala Pro Gly
            180                   185                   190
Asp Leu Thr Val Gln Glu Gly Lys Leu Cys Arg Met Asp Cys Lys Val
            195                   200                   205
Ser Gly Leu Pro Thr Pro Asp Leu Ser Trp Gln Leu Asp Gly Lys Pro
    210                   215                   220
Val Arg Pro Asp Ser Ala His Lys Met Leu Val Arg Glu Asn Gly Val
225                   230                   235                   240
His Ser Leu Ile Ile Glu Pro Val Thr Ser Arg Asp Ala Gly Ile Tyr
                245                   250                   255
Thr Cys Ile Ala Thr Asn Arg Ala Gly Gln Asn Ser Phe Ser Leu Glu
            260                   265                   270
Leu Val Val Ala Ala Lys Glu Ala His Lys Pro Pro Val Phe Ile Glu
            275                   280                   285
Lys Leu Gln Asn Thr Gly Val Ala Asp Gly Tyr Pro Val Arg Leu Glu
    290                   295                   300
Cys Arg Val Leu Gly Val Pro Pro Pro Gln Ile Phe Trp Lys Lys Glu
305                   310                   315                   320
Asn Glu Ser Leu Thr His Ser Thr Asp Arg Val Ser Met His Gln Asp
                325                   330                   335
Asn His Gly Tyr Ile Cys Leu Leu Ile Gln Gly Ala Thr Lys Glu Asp
            340                   345                   350
Ala Gly Trp Tyr Thr Val Ser Ala Lys Asn Glu Ala Gly Ile Val Ser
            355                   360                   365
Cys Thr Ala Arg Leu Asp Val Tyr Thr Gln Trp His Gln Gln Ser Gln
    370                   375                   380
Ser Thr Lys Pro Lys Lys Val Arg Pro Ser Ala Ser Arg Tyr Ala Ala
385                   390                   395                   400
Leu Ser Asp Gln Gly Leu Asp Ile Lys Ala Ala Phe Gln Pro Glu Ala
                405                   410                   415
Asn Pro Ser His Leu Thr Leu Asn Thr Ala Leu Val Glu Ser Glu Asp
            420                   425                   430
Leu
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<210> 5053
<211> 781
<212> DNA
<213> Homo sapiens

<400> 5053

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120
ctctgtggaa gctgcagatg agagaccagc aatgcatcag ctgcacctgc agtagagcgc
180
ggagatagcg ttggaccatg tcctaagatg tccccgctgc gcccgctgct gctggccctg
240
gcccttgcct ccgtgccttg cgcccagggc gcctgccccg cctccgccga cctcaagcac
300
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420
aactgggcca caccgcctc ctcacttgtg gtggccccgc gctgcgagct caccgtgtgg
480
tcccggcaag gcaaggcggg caagacgcac aagttctctg ccggcaccta cccgcgcctg
540
gaggagtacc gccggggcat cttaggagac tggtccaacg ctatctccgc gctctactgc
600
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660
cactcagccc atccctgggc tctgctccgg ggccccaaga cccaggagga ggagcgttct
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780
a
781
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<210> 5054
<211> 156
<212> PRT
<213> Homo sapiens
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<400> 5054
Glu Thr Ser Asn Ala Ser Ala Ala Pro Ala Val Glu Arg Gly Asp Ser
1               5                   10                  15
Val Gly Pro Cys Pro Lys Met Ser Pro Leu Arg Pro Leu Leu Leu Ala
            20                  25                  30
Leu Ala Leu Ala Ser Val Pro Cys Ala Gln Gly Ala Cys Pro Ala Ser
            35                  40                  45
Ala Asp Leu Lys His Ser Asp Gly Thr Arg Thr Cys Ala Lys Leu Tyr
        50                  55                  60
Asp Lys Ser Asp Pro Tyr Tyr Glu Asn Cys Cys Gly Gly Ala Glu Leu
65                  70                  75                  80
Ser Leu Glu Ser Gly Ala Asp Leu Pro Tyr Leu Pro Ser Asn Trp Ala
                85                  90                  95
Asn Thr Ala Ser Ser Leu Val Val Ala Pro Arg Cys Glu Leu Thr Val
                100                 105                 110
Trp Ser Arg Gln Gly Lys Ala Gly Lys Thr His Lys Phe Ser Ala Gly
            115                 120                 125
Thr Tyr Pro Arg Leu Glu Glu Tyr Arg Arg Gly Ile Leu Gly Asp Trp
        130                 135                 140
Ser Asn Ala Ile Ser Ala Leu Tyr Cys Arg Cys Ser
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145                    150                    155
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<210> 5055
<211> 2520
<212> DNA
<213> Homo sapiens

<400> 5055
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120
ctactgctta aattctaaat aagtactttt gttttttctc tctaatcctc tcccatcccc
180
tcctctcttt ctcttaaagg catggagagt agaaaactga tttctgctac agacattcag
240
tactctggca gtctgctgaa ctccttgaat gagcaacgtg gccatggact cttctgtgat
300
gttaccgtta ttgtggaaga ccgaaaattc cgggctcaca agaatattct ttcagcttct
360
agtacctact tccatcagct cttctctgtt gctgggcaag ttgttgaact gagctttata
420
agagcagaga tctttgcaga aattctcaat tatatctata gttctaaaat tgttcgtgtt
480
agatcagatt tgcttgatga gttaattaaa tcagggcagt tattaggagt gaaatttata
540
gcagagcttg gtgtcccatt gtcacaggtt aaaagcatct caggtacagc gcaggatggt
600
aatactgagc ctttacctcc tgattctggt gacaagaacc ttgtaataca gaaatcaaaa
660
gatgaagccc aagataatgg ggctactata atgcctatta taacagagtc tttttcatta
720
tctgccgaag attatgaaat gaaaaagatc attgttaccg attctgatga tgatgatgat
780
gatgtcattt tttgctccga gattctgccc acaaaggaga ctttgccgag taataacaca
840
gtggcacagg tccaatctaa cccaggccct gttgctattt cagatgttgc acctagtgct
900
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960
aatcaggcaa ctttgagcca acacaagga agtgaaaaat tgttggtatc ttcagctcca
1020
acacatctga ctcccaatat tattttgtta aatcagacac cactttctac accaccaaat
1080
gtcagttctt cacttccaaa tcatatgccc tcttcaatca atttacttgt gcagaatcag
1140
cagacaccaa acagtgctat tttaacagga aacaaggcca atgaagagga ggaggaggaa
1200
ataatagatg atgatgatga cactattagc tccagtcctg actcggccgt cagtaataca
1260
tctttggtcc cacaggctga tacctcccaa ataccagtt ttgatggatc attaatacag
1320
aagatgcaga ttcctacact tcttcaagaa ccactttcca attccttaaa aatttcagat
1380
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ataattacta gaaatactaa tgatccaggc gtaggatcaa aacatctaat ggagggtcag
1440
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1500
tatgcaaata tcggtgaaga tacttatgat atagtgatcc ctgtcaaaga tgaccctgat
1560
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1620
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1680
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1800
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1860
gcctgtggca aatctttcat caactatcag tttatgtctt cacatataaa gtcagttcat
1920
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1980
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2100
cagaacaagc caatgacctg ggaagatatt tttattcagc aggaaaatga ttcaattttt
2160
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2220
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2280
tgtaaaacaa attaaggtgc gaacaagtta atttgatctg ccacattatc tgaaggaagt
2340
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2400
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2520
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<210> 5056
<211> 672
<212> PRT
<213> Homo sapiens

<400> 5056
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Ser Leu Leu Asn Ser Leu Asn Glu Gln Arg Gly His Gly Leu Phe Cys
            20                  25                  30
Asp Val Thr Val Ile Val Glu Asp Arg Lys Phe Arg Ala His Lys Asn
        35                  40                  45
Ile Leu Ser Ala Ser Ser Thr Tyr Phe His Gln Leu Phe Ser Val Ala
    50                  55                  60
Gly Gln Val Val Glu Leu Ser Phe Ile Arg Ala Glu Ile Phe Ala Glu
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```
65                      70                      75                      80
Ile Leu Asn Tyr Ile Tyr Ser Ser Lys Ile Val Arg Val Arg Ser Asp
                85                      90                      95
Leu Leu Asp Glu Leu Ile Lys Ser Gly Gln Leu Leu Gly Val Lys Phe
                100                     105                     110
Ile Ala Glu Leu Gly Val Pro Leu Ser Gln Val Lys Ser Ile Ser Gly
                115                     120                     125
Thr Ala Gln Asp Gly Asn Thr Glu Pro Leu Pro Pro Asp Ser Gly Asp
                130                     135                     140
Lys Asn Leu Val Ile Gln Lys Ser Lys Asp Glu Ala Gln Asp Asn Gly
145                     150                     155                     160
Ala Thr Ile Met Pro Ile Ile Thr Glu Ser Phe Ser Leu Ser Ala Glu
                165                     170                     175
Asp Tyr Glu Met Lys Lys Ile Ile Val Thr Asp Ser Asp Asp Asp Asp
                180                     185                     190
Asp Asp Val Ile Phe Cys Ser Glu Ile Leu Pro Thr Lys Glu Thr Leu
                195                     200                     205
Pro Ser Asn Asn Thr Val Ala Gln Val Gln Ser Asn Pro Gly Pro Val
                210                     215                     220
Ala Ile Ser Asp Val Ala Pro Ser Ala Ser Asn Asn Ser Pro Pro Leu
225                     230                     235                     240
Thr Asn Ile Thr Pro Thr Gln Lys Leu Pro Thr Pro Val Asn Gln Ala
                245                     250                     255
Thr Leu Ser Gln Thr Gln Gly Ser Glu Lys Leu Leu Val Ser Ser Ala
                260                     265                     270
Pro Thr His Leu Thr Pro Asn Ile Ile Leu Leu Asn Gln Thr Pro Leu
                275                     280                     285
Ser Thr Pro Pro Asn Val Ser Ser Ser Leu Pro Asn His Met Pro Ser
                290                     295                     300
Ser Ile Asn Leu Leu Val Gln Asn Gln Gln Thr Pro Asn Ser Ala Ile
305                     310                     315                     320
Leu Thr Gly Asn Lys Ala Asn Glu Glu Glu Glu Glu Glu Ile Ile Asp
                325                     330                     335
Asp Asp Asp Asp Thr Ile Ser Ser Ser Pro Asp Ser Ala Val Ser Asn
                340                     345                     350
Thr Ser Leu Val Pro Gln Ala Asp Thr Ser Gln Asn Thr Ser Phe Asp
                355                     360                     365
Gly Ser Leu Ile Gln Lys Met Gln Ile Pro Thr Leu Leu Gln Glu Pro
                370                     375                     380
Leu Ser Asn Ser Leu Lys Ile Ser Asp Ile Ile Thr Arg Asn Thr Asn
385                     390                     395                     400
Asp Pro Gly Val Gly Ser Lys His Leu Met Glu Gly Gln Lys Ile Ile
                405                     410                     415
Thr Leu Asp Thr Ala Thr Glu Ile Glu Gly Leu Ser Thr Gly Cys Lys
                420                     425                     430
Val Tyr Ala Asn Ile Gly Glu Asp Thr Tyr Asp Ile Val Ile Pro Val
                435                     440                     445
Lys Asp Asp Pro Asp Glu Gly Glu Ala Arg Leu Glu Asn Glu Ile Pro
                450                     455                     460
Lys Thr Ser Gly Ser Glu Met Ala Asn Lys Arg Met Lys Val Lys His
465                     470                     475                     480
Asp Asp His Tyr Glu Leu Ile Val Asp Gly Arg Val Tyr Tyr Ile Cys
                485                     490                     495
Ile Val Cys Lys Arg Ser Tyr Val Cys Leu Thr Ser Leu Arg Arg His
```

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           500                      505                    510
Phe Asn Ile His Ser Trp Glu Lys Lys Tyr Pro Cys Arg Tyr Cys Glu
        515                      520                    525
Lys Val Phe Pro Leu Ala Glu Tyr Arg Thr Lys His Glu Ile His His
        530                      535                    540
Thr Gly Glu Arg Arg Tyr Gln Cys Leu Ala Cys Gly Lys Ser Phe Ile
545                      550                    555                    560
Asn Tyr Gln Phe Met Ser Ser His Ile Lys Ser Val His Ser Gln Asp
                565                      570                    575
Pro Ser Gly Asp Ser Lys Leu Tyr Arg Leu His Pro Cys Arg Ser Leu
            580                      585                    590
Gln Ile Arg Gln Tyr Ala Tyr His Ser Asp Arg Ser Ser Thr Ile Pro
        595                      600                    605
Ala Met Lys Asp Asp Gly Ile Gly Tyr Lys Val Asp Thr Gly Lys Glu
        610                      615                    620
Pro Pro Val Gly Thr Thr Thr Ser Thr Gln Asn Lys Pro Met Thr Trp
625                      630                    635                    640
Glu Asp Ile Phe Ile Gln Gln Glu Asn Asp Ser Ile Phe Lys Gln Asn
                645                      650                    655
Val Thr Asp Gly Ser Thr Glu Phe Glu Phe Ile Ile Pro Glu Ser Tyr
            660                      665                    670
```

<210> 5057
<211> 673
<212> DNA
<213> Homo sapiens

<400> 5057
nnggcggcgc agctattgct ggacggccag tgggagagcg aggcctgagc ctctgcgtct
60
aggatcaaaa tggtttcaat cccagaatac tatgaaggca agaacgtcct cctcacagga
120
gctaccggtt ttctagggaa ggtgcttctg gaaaagttgc tgaggtcttg tcctaaggtg
180
aattcagtat atgttttggt gaggcagaaa gctggacaga caccacaaga gcgagtggaa
240
gaagtcctta gtggcaagct ttttgacaga ttgagagatg aaaatccaga ttttagagag
300
aaaattatag caatcaacag cgaactcacc caacctaaac tggctctcag tgaagaagat
360
aaagaggtga tcatagattc taccaatatt atattccact gtgcagctac agtaaggttt
420
aatgaaaatt taaggtaagt acaagtaatt atataatatt tgaacttcag tatagttatt
480
aaaaaatctc attttaattc tactttttag tcaatttgtt ttgaatgtga tttgatacta
540
tttgcctatg ttaactgtgg ctttcagtgt cctacagagt gttaaaagaa ttctcttctt
600
cttctcagtt taaaaatctt ggataactaa tacatgttta ttggaagaag ttgccatgaa
660
tttaaacatg cat
673

<210> 5058
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<211> 122
<212> PRT
<213> Homo sapiens

<400> 5058
Met Val Ser Ile Pro Glu Tyr Tyr Glu Gly Lys Asn Val Leu Leu Thr
1   5   10   15
Gly Ala Thr Gly Phe Leu Gly Lys Val Leu Leu Glu Lys Leu Leu Arg
            20   25   30
Ser Cys Pro Lys Val Asn Ser Val Tyr Val Leu Val Arg Gln Lys Ala
            35   40   45
Gly Gln Thr Pro Gln Glu Arg Val Glu Glu Val Leu Ser Gly Lys Leu
        50   55   60
Phe Asp Arg Leu Arg Asp Glu Asn Pro Asp Phe Arg Glu Lys Ile Ile
65   70   75   80
Ala Ile Asn Ser Glu Leu Thr Gln Pro Lys Leu Ala Leu Ser Glu Glu
                85   90   95
Asp Lys Glu Val Ile Ile Asp Ser Thr Asn Ile Ile Phe His Cys Ala
            100   105   110
Ala Thr Val Arg Phe Asn Glu Asn Leu Arg
            115   120

<210> 5059
<211> 480
<212> DNA
<213> Homo sapiens

<400> 5059
ctcgagaact gaaagacact ctctatgggt taagccaccc agtgcatggt atcttgttat
60
aactgcccga gctgactgag acggacgttc aggacagaga gcgtgaatgc atagtgacac
120
cagctgtgag tctttctcca gggacagtcg gcagccggcc ctaggtgcag agccgatgac
180
aaggacccag gctctcagca ggtcttccaa gcagtgtggt agaaaggcag gcagggtgtg
240
gggaagtgga gccaggccac cagtcatgat gtcaagactg agccaggaag caaaggcagg
300
cagagagatg gggaggagag ggagcaggag gggactggcc atctctgaga cagaagcgtg
360
agtagtgggt ggacttgagg gcaggagagg actgaaaggg cagaggcctg ggcgatgcag
420
ccagagaggg agatgctggt gtggggaggt ctgggcaggg atgttttagg tgatggcaga
480

<210> 5060
<211> 114
<212> PRT
<213> Homo sapiens

<400> 5060
Met Ala Ser Pro Leu Leu Leu Pro Leu Leu Pro Ile Ser Leu Pro Ala
1   5   10   15
Phe Ala Ser Trp Leu Ser Leu Asp Ile Met Thr Gly Gly Leu Ala Pro

4244

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                    20                      25                      30
Leu Pro His Thr Leu Pro Ala Phe Leu Pro His Cys Leu Glu Asp Leu
            35                      40                      45
Leu Arg Ala Trp Val Leu Val Ile Gly Ser Ala Pro Arg Ala Gly Cys
        50                      55                      60
Arg Leu Ser Leu Glu Lys Asp Ser Gln Leu Val Ser Leu Cys Ile His
65                      70                      75                      80
Ala Leu Cys Pro Glu Arg Pro Ser Gln Ser Ala Arg Ala Val Ile Thr
                85                      90                      95
Arg Tyr His Ala Leu Gly Gly Leu Thr His Arg Glu Cys Leu Ser Val
            100                     105                     110
Leu Glu
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<210> 5061
<211> 2462
<212> DNA
<213> Homo sapiens

<400> 5061
gcggccgcca attttttttt tttttttttt tttttttaa aaaggcccaa aactttattt
60
agttttcagg gaaatataag_atgcatgtaa acataaaata caaaacaaaa cccaaatctt
120
acagtctaga agcatgccaa gacagagcat tttctgcaga ccaaagagtc ccgtcaaagt
180
gataaaggac acctggaaag tggcaggcca aggggctggt cccttcccca agggcactgc
240
attttttgtga tgagattaaa aacaaaccaa ctccactatt aaaaatgcta gaaacatgga
300
gatagtttag caccaccatt gattctggaa atatttcagc actcaaatcg actgcactga
360
gtttaatgtc ctttctccag tttctctgct gaggaggaaa gaaggaaaac ctggaggaag
420
ggctcctcct gacccacag agcccactaa gagctgggag gggaattcca tgaggaattc
480
tccaaggttc tggagctcca gagacatcca ccagtcccca cccagccatg cagtccacat
540
gctcacgctt cagggattac tgaagtctgc cttgcccggg agtcacttcc tgcagacctc
600
tgagtacctg gtggggaaac ccatttccca tcctgtgtct tggatttaaa gaaaacctgt
660
tggagataat gagttgtaaa ttcaaggagg gtggctgttt tgctgttctt tctctgcagt
720
aaactcttat ggggagtgtg ccttggttat aaggcaacgc aaaatggtag ggtatatcca
780
tggatgaatg ttcatcacac ccaatctaat tcataccagg tggcaggctc agcaaactga
840
accaccacag gtgtcagaga tacttgagaa tgactggtac caacaagacg acaaaggagg
900
ttgccttcct cccagatgtg cccaatggag tctgaactct ggttctaatt tgtggaggtg
960
ggtccctact gtatgaccca ttgtggtcac tgctctttga gccatacaac ttgagagact
1020
```

ggctttggat tggacagtca aagggaagtg ggcaaaacca gctgagaacc cgggagctgg
1080
atgcatatat tctggaatca gggcctgcaa actcaaagat tggtttgtgg ctggtgactt
1140
ctctctgcta agtaaatcaa tgaccattca ttgagaactg atggggaccc agcgtgtggc
1200
ccaatgagtg gcagtttttt cctagccagc ttctgtggcc aaatttggag gattttccaa
1260
cctgctatgg ctggaccctt gggtgttaaa tcactaaatt ccctttctac ctgctctctt
1320
cttcctgaaa cactcagagc tgacttcttc cttctttcta atcaacaaag acaaaactcc
1380
aagccccttt tcagccttca cacaattttt ctttctagaa gacatccgct tctggaagcc
1440
tccttcccta atgaagggac agtaggcccc agctacccca aacatgcaca tgctcttctc
1500
accaacgtgc ctctcacttg cctctaacgt gctcgagcca tccttttgtt ctaaataatt
1560
cttcctccct ccctcccttt tttctctttc acctcttgag gcgcagccta ttggccagga
1620
tggaactggg agcaaggcgg ggaccttcag tgcaggggac cccattctct aaggccactg
1680
agttctagga ctggagtagg agagggtgct gttgtcaagg ttaagtgcaa acttgagatt
1740
ttaaaaagac aggattgggg aagggggatt gcatgctaat cccaacctta taggcaggct
1800
gggatcaaga ccttggaagg tagggctctc cacccagtct gtaagcacca gtgtgcccac
1860
cttatggcct ggggacccag gtttgcagga gggaagttaa cagtggggct gttttttcccc
1920
aaagctgtgg gtcactgatc ctgtcttctc actggctctg atcatgcagc ttgggaacca
1980
cagagacatg agactgcacc aaacagggct gatgatttag ccagaaactc aggaaggtct
2040
agcacagccc tccacacact tcccaggaag tgtttggtct ggccctgcag ttgggactaa
2100
acttatatgc acctgcaggt cttgttgggt gcaccgtgag caagttctca ccccaaccac
2160
ctgacccacc ctctgaaaca aggacgaaag ggctggcagc tttcattata aggggcttct
2220
catacccatg gcatggctga ggggtgggag tcagcctgct cgatgacacg tctgcagggg
2280
atgacctaac tgaaccaact cagtgtttct attcccagtg gcatctcttt tgcacatctt
2340
cattttggag cctgggatga ctgcctaggc cacttatgct agacctgtta atgccagtgt
2400
gaaatttcca actaaatact taataaaata attacaaaaa gaaaaaaaaa tgacacattg
2460
ca
2462

<210> 5062
<211> 136
<212> PRT

<213> Homo sapiens

<400> 5062
Met Ala Gly Trp Gly Leu Val Asp Val Ser Gly Ala Pro Glu Pro Trp
1               5                   10                  15
Arg Ile Pro His Gly Ile Pro Leu Pro Ala Leu Ser Gly Leu Cys Gly
            20                  25                  30
Val Arg Arg Ser Pro Ser Ser Arg Phe Ser Phe Phe Pro Pro Gln Gln
        35                  40                  45
Arg Asn Trp Arg Lys Asp Ile Lys Leu Ser Ala Val Asp Leu Ser Ala
    50                  55                  60
Glu Ile Phe Pro Glu Ser Met Val Val Leu Asn Tyr Leu His Val Ser
65                  70                  75                  80
Ser Ile Phe Asn Ser Gly Val Gly Leu Phe Leu Ile Ser Ser Gln Lys
                85                  90                  95
Cys Ser Ala Leu Gly Glu Gly Thr Ser Pro Leu Ala Cys His Phe Pro
            100                 105                 110
Gly Val Leu Tyr His Phe Asp Gly Thr Leu Trp Ser Ala Glu Asn Ala
        115                 120                 125
Leu Ser Trp His Ala Ser Arg Leu
    130                 135

<210> 5063
<211> 561
<212> DNA
<213> Homo sapiens

<400> 5063
gacgcaaccc cagtgtcaaa ccaggggta agtcaaggta tccggccagg cgccggcagc
60
tgaggggggcc cagtggggtc tcgtctgtgg cccagagacg tggcggaaga aggcagtaca
120
tctcccttct tagagagaga gtggaagctt ctgagtgtgg cttgggtcgt tctgaaccat
180
ggtgacgttt ccaccctgcc actgcctgtc ttccagtttg acttgctgga aatggaccgg
240
ctggagaggc cactggttga cctgccgctc ctcctggacc cgccctccta cgtgcccgac
300
acggtggacc tcaccgatga cgctctggcc cgaaaatact ggctcacctg ctttgaggag
360
gccctggacg gggtagtgaa gcgcgcagtg gcgagccagc cagactctgt ggatgcagcc
420
gagagggcgg agaagttccg gcagaagtac tggaacaagc ttcagaccct gaggcagcag
480
cccttcgcct atgggaccct gaccgtgcgc agcctgctgg acaccaggga gcactgtctg
540
aacgagttca acttcccgga t
561

<210> 5064
<211> 110
<212> PRT
<213> Homo sapiens

<400> 5064
Met Asp Arg Leu Glu Arg Pro Leu Val Asp Leu Pro Leu Leu Leu Asp
1               5                   10                  15
Pro Pro Ser Tyr Val Pro Asp Thr Val Asp Leu Thr Asp Asp Ala Leu
                20                  25                  30
Ala Arg Lys Tyr Trp Leu Thr Cys Phe Glu Glu Ala Leu Asp Gly Val
            35                  40                  45
Val Lys Arg Ala Val Ala Ser Gln Pro Asp Ser Val Asp Ala Ala Glu
        50                  55                  60
Arg Ala Glu Lys Phe Arg Gln Lys Tyr Trp Asn Lys Leu Gln Thr Leu
65                  70                  75                  80
Arg Gln Gln Pro Phe Ala Tyr Gly Thr Leu Thr Val Arg Ser Leu Leu
                85                  90                  95
Asp Thr Arg Glu His Cys Leu Asn Glu Phe Asn Phe Pro Asp
            100                 105                 110

<210> 5065
<211> 370
<212> DNA
<213> Homo sapiens

<400> 5065
attgaggacg cgcgggagcg aatgaggacg ctgcggaagc tgatccggga tctcccagga
60
cactactatg aaacgctcaa attccttgtg ggccatctca agaccatcgc tgaccactct
120
gagaaaaaca agatggaacc ccggaacctg gccctggtct ttgggccgac actggtgagg
180
acgtctgagg acaacatgac agacatggtg acccacatgc ctgaccgcta caagatcgtg
240
gagacactga tccagcactc agactggttc ttcagtgacg aagaggacaa gggagagaga
300
attctaccac ctgtagttca gtcaagtcca agggttcgtg ggcccccaag aaggagccgt
360
acgcccgggc
370

<210> 5066
<211> 123
<212> PRT
<213> Homo sapiens

<400> 5066
Ile Glu Asp Ala Arg Glu Arg Met Arg Thr Leu Arg Lys Leu Ile Arg
1               5                   10                  15
Asp Leu Pro Gly His Tyr Tyr Glu Thr Leu Lys Phe Leu Val Gly His
                20                  25                  30
Leu Lys Thr Ile Ala Asp His Ser Glu Lys Asn Lys Met Glu Pro Arg
            35                  40                  45
Asn Leu Ala Leu Val Phe Gly Pro Thr Leu Val Arg Thr Ser Glu Asp
        50                  55                  60
Asn Met Thr Asp Met Val Thr His Met Pro Asp Arg Tyr Lys Ile Val
65                  70                  75                  80
Glu Thr Leu Ile Gln His Ser Asp Trp Phe Phe Ser Asp Glu Glu Asp

```
                        85                  90                    95
    Lys Gly Glu Arg Ile Leu Pro Pro Val Val Gln Ser Ser Pro Arg Val
                100                 105                 110
    Arg Gly Pro Pro Arg Arg Ser Arg Thr Pro Gly
            115                 120


<210> 5067
<211> 2023
<212> DNA
<213> Homo sapiens

<400> 5067
gctgaggcac aacatgatcg agagcttcgg nagcttgaac agagggtctc cctccggagg
60
gcactcttag aacaaagat tgaagaagag atgttggctt tgcagaatga gcgcacagaa
120
cgaatacgaa gcctgttgga acgtcaagcc agagagattg aagcttttga ctctgaaagc
180
atgagactag gttttagtaa tatggtcctt tctaatctct cccctgaggc attcagccac
240
agctacccgg gagcttctgg ttggtcacac aaccctactg ggggtccagg acctcactgg
300
ggtcatccca tgggtggccc accacaagct tggggccatc caatgcaagg tggaccccag
360
ccatggggtc acccttcagg gccaatgcaa ggggtacctc gaggtagcag tatgggagtc
420
cgcaatagcc cccaggctct gaggcggaca gcttctgggg gacggacaga gcagggcatg
480
agcagaagca cgagtgtcac ttcacaaata tccaatgggt cacacatgtc ttatacataa
540
cttaataatt gagagtggca attccgctgg agctgtctgc caaaagaaac tgcctacaga
600
catcatcaca gcagcctcct cacttgggta ctacagtgtg gaagctgagt gcatatggta
660
tattttattc attttttgtaa agcgttctgt tttgggttta ctaattggga tgtcatagta
720
cttggctgcc gggtttgttt gttttttgggg aaattttgaa aagtggagtt gatattaaaa
780
ataaatgtgt atgtgtgtac atatatatac acacacatac acatatatta tgcatgtggt
840
gaaaagaatt ggctagatag gggatttttc tgaacactgc aaaaatagaa cgtagcaaaa
900
tggcttcagt tatcactttt gggtgtctgt atcctaagaa gtttctgaaa agatctaaag
960
ccttttatc ccatatccca aattcttatg agccactcac agcaggcagc atatgttgaa
1020
ataagttatt actggtacac acctgcattg cctcaccagt gtatttattt gttattaaat
1080
tgatctgact tctcagcctc atttggacta aaaaaagaaa gcagaaatcc atgaacacat
1140
tgcttctcgg ccttttggct aagatcaagt gtagaaatcc atgaacacta aaggacttca
1200
ttgatttttt cagagagtag aaaacaactt agtttttctt ttttcctgaa tgcgtcatag
1260
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```
gcttgtgagt gattttgtc cattcaattg tgccttcttt gtattatgat aagatggggg
1320
tacttaagga gatcacaagt tgtgtgagga ttgcattaac aaacctatga gccttcaatg
1380
gggaagacca gaagggtgag aggggccctg aaagttcata tggtgggtat gtcccgcagc
1440
agagtgagga gatgaagctt acgtgtcctg acgttttgtt gcttatactg tgatatctca
1500
tcctagctaa gctctataat gcccaagacc ccaaacagta cttttacttt gtttgtacaa
1560
aaacaaagac atatagccaa tacaaatcaa atgccggagg tgtttgatgc catatttgca
1620
aattgccatc tattgaaatt ctcgtcacac tacatagaca taattgttat ctccttttgg
1680
cttatgtgat tttctgttta caagtagaat agccaattat ttaaatgttt agttgccaca
1740
gtgaaccagg agtcactgag ccaatgactt taccagctgc tgactaatct tcatcaccac
1800
tgtagatttt gctgcatgtg caggtcctct atttttaatt gctgttttcg ttgctgcagt
1860
actttacaaa cttctagttc gttgagactt agtgaccatt tggcatcaag ttaacatcac
1920
acaataggaa acaccacttc cacaagtctc aagcctcagt gctaaagtac tactgaaaag
1980
gaactaggaa gtttggccaa ttaaaaaaaa aaaaagtcg acc
2023


<210> 5068
<211> 179
<212> PRT
<213> Homo sapiens

<400> 5068
Ala Glu Ala Gln His Asp Arg Glu Leu Arg Xaa Leu Glu Gln Arg Val
1               5                   10                  15
Ser Leu Arg Arg Ala Leu Leu Glu Gln Lys Ile Glu Glu Glu Met Leu
            20                  25                  30
Ala Leu Gln Asn Glu Arg Thr Glu Arg Ile Arg Ser Leu Leu Glu Arg
        35                  40                  45
Gln Ala Arg Glu Ile Glu Ala Phe Asp Ser Glu Ser Met Arg Leu Gly
    50                  55                  60
Phe Ser Asn Met Val Leu Ser Asn Leu Ser Pro Glu Ala Phe Ser His
65                  70                  75                  80
Ser Tyr Pro Gly Ala Ser Gly Trp Ser His Asn Pro Thr Gly Gly Pro
            85                  90                  95
Gly Pro His Trp Gly His Pro Met Gly Gly Pro Pro Gln Ala Trp Gly
            100                 105                 110
His Pro Met Gln Gly Gly Pro Gln Pro Trp Gly His Pro Ser Gly Pro
        115                 120                 125
Met Gln Gly Val Pro Arg Gly Ser Ser Met Gly Val Arg Asn Ser Pro
        130                 135                 140
Gln Ala Leu Arg Arg Thr Ala Ser Gly Gly Arg Thr Glu Gln Gly Met
145                 150                 155                 160
Ser Arg Ser Thr Ser Val Thr Ser Gln Ile Ser Asn Gly Ser His Met
```

4250

```
                    165              170              175
Ser Tyr Thr


<210> 5069
<211> 3655
<212> DNA
<213> Homo sapiens


<400> 5069
nttttttttt tttttttttt tttggaagtc ctgagttgag gcttgcggga tcctttccgg
60
agaaagcgca ggctaaagcc gcaggtgaag atgtccaact acgcgaacga catgtggccg
120
ggctcgccgc aggagaagga ttcgccctcg acctcgcggt cgggcgggtc cagccggctg
180
tcgtcgcggt ctaggagccg ctctttttcc agaagctctc ggtcccattc ccgcgtctcg
240
agccggtttt cgtccaggag tcggaggagc aagtccaggt cccgttcccg aaggcgccac
300
cagcggaagt acaggcgcta ctcgcggtca tactcgcgga gccggtcgcg atcccgcagc
360
cgccgttacc gagagaggcg ctacgggttc accaggagat actaccggtc tccttcgcgg
420
taccggtccc ggtcccgtag caggtcgcgc tctcggggaa ggtcgtactg cggaagggcg
480
tacgcgatcg cgcggggaca gcgctactac ggctttggtc gcacagtgta cccggaggag
540
cacagcagat ggagggacag atccaggacg aggtcgcgga gcagaacccc ctttcgctta
600
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720
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780
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840
ttggctgact gttcttagtg ggtggagcct tttaaatgtt atgattaagt taaaggttct
900
aagttaacgt gattgggaag aacaatatca aaacacgcct tcttttagtt gacattatta
960
ctgaataaaa ttggattgtc gagtatccta agtgacctag gaggccgggc gcggcggctc
1020
acctctgtaa tcccagcact gggggaggcg gaggcggagg cgggtgggtc acttgaggcc
1080
aggcgttcca caccagccag gccaacatag ctcactatct agtaaaagta caaaaattag
1140
ccggggggtgg cggtagaaat acactttagt agtgtatcag tattggttca gtggttgtga
1200
taattatata aagaatctac agcagaaaaa cctggttttc agaaatacat ctttgaagag
1260
aaagcaaaat aatatcacta ttagctagag aaaattaagt acaacaaaaa gacaaaataa
1320
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taggacgctc aggcctttag tcaagaaaac aaaactaatt gttgagataa tttaagaatt
1380
ttattctttt cagcaagaaa tgagctggag aatagaattt tcagtgaata aagttacaca
1440
gttgtccctc tgttcactcg ggggtttggt gccaggatgc atatggaacc ctcgcgcaca
1500
cttggggttt acagtctctc aaacactgtg gtactttcta tctgcattta gtaagggga
1560
gaaaaaacaa gtataaagtg gaccagcgca gctactagtg ttcaagggca accttagttt
1620
acctattata aaacaagtga cttaatatat ttaataccac aaaataacat atttattgtg
1680
taattctgag ttctcttggg aaataactac cagattaatg agtattttaa aatctctctc
1740
tttttttttt agatcgaatg gagctgttag aaatagcaaa aaccaatgca gcgaaagctc
1800
taggaacaac caacattgac ttgccagcta gtctcagaac tgttccttca gccaaagaaa
1860
caagccgtgg aataggtgta tcaagtaatg gtgcaaagcc tgaagtaagt attctaggtt
1920
tgtcggaaca aaactttcag aaagccaact gtcaaatctg attagccact tatatcttag
1980
actatacttt ttgggaagtc tagagatgta tataatgtgc taaattcaaa gtagcaaatc
2040
tgaagatagg caatgtcaaa cccatgaaaa tgggagatta atgagcttta tttggccgtg
2100
catggtgcct catgcctgta atgaggcaga tggcttgagt ccaggagttc aagactagcc
2160
tgggcaatgt ggcaaaaccg cgtgtttaca aaaatacaa aaattagcca ggcatggtgg
2220
tgcatgcctg tagtcccagc tgtttgggag gctgaggcag gaggatcttt gagcctagga
2280
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2340
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2400
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2460
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2520
cagtatagtt tatctgctct atttctgtct tatagaaatc atgaatgtgg tctccagaca
2580
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2640
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2700
gaatttggga caggcactat ttgcataaag tattaaagtc aattttaaa ctaagcaaag
2760
gtacacgttg taacggtggg gcatctgtga aaaagatgtc cctttcataa tatatgcaat
2820
atattccaga tgttttgaga gattacagaa gaggaggcct gcttcacttg cagataagtt
2880
tattataatt ctccagaaat gtgcaggatg tgcattagca aattgcactg tactttcac
2940
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4252

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3000
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3420
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3480
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3540
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3655

<210> 5070
<211> 255
<212> PRT
<213> Homo sapiens

<400> 5070

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Asp	Ser	Pro	Ser	Thr	Ser	Arg	Ser	Gly	Gly	Ser	Ser	Arg	Leu	Ser	Ser
			20					25					30		
Arg	Ser	Arg	Ser	Arg	Ser	Phe	Ser	Arg	Ser	Ser	Arg	Ser	His	Ser	Arg
		35				40					45				
Val	Ser	Ser	Arg	Phe	Ser	Ser	Arg	Ser	Arg	Arg	Ser	Lys	Ser	Arg	Ser
	50				55					60					
Arg	Ser	Arg	Arg	Arg	His	Gln	Arg	Lys	Tyr	Arg	Arg	Tyr	Ser	Arg	Ser
65					70				75						80
Tyr	Ser	Arg	Ser	Arg	Ser	Arg	Ser	Arg	Ser	Arg	Arg	Tyr	Arg	Glu	Arg
			85					90					95		
Arg	Tyr	Gly	Phe	Thr	Arg	Arg	Tyr	Tyr	Arg	Ser	Pro	Ser	Arg	Tyr	Arg
			100					105					110		
Ser	Arg	Ser	Arg	Ser	Arg	Ser	Arg	Ser	Arg	Gly	Arg	Ser	Tyr	Cys	Gly
		115					120					125			
Arg	Ala	Tyr	Ala	Ile	Ala	Arg	Gly	Gln	Arg	Tyr	Tyr	Gly	Phe	Gly	Arg
	130					135					140				
Thr	Val	Tyr	Pro	Glu	Glu	His	Ser	Arg	Trp	Arg	Asp	Arg	Ser	Arg	Thr
145					150					155					160
Arg	Ser	Arg	Ser	Arg	Thr	Pro	Phe	Arg	Leu	Ser	Glu	Lys	Gly	Gly	Trp
				165					170					175	
Val	Ile	Tyr	Leu	Ser	Ile	Cys	Gly	Asn	Val	Trp	Trp	Gln	Tyr	Met	Ser

```
                 180                      185                      190
    Arg Leu Gly Asn Gln Arg Cys Cys Val Val Ser Ile Leu Val Pro Leu
             195                      200                      205
    Val Pro Glu Ile Phe Leu Glu Glu Arg Gly Arg Thr Leu Pro Val Phe
         210                      215                      220
    Lys Trp Thr Ala Phe Ser Leu Gly Leu Lys Val Asn Trp Lys Leu Asn
    225                      230                      235                      240
    Gly Ser Gly Cys Arg Glu Leu Phe Phe Leu Leu Ala Asp Cys Ser
                 245                      250                      255
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<210> 5071
<211> 2196
<212> DNA
<213> Homo sapiens

<400> 5071
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120
cacagctcag gccccttcag gccatcagca ccaagggacc ttgtcccaca atccccaacc
180
tccctcggca gaggggtctt cagccattca gaggagagaa gagaaccgag aaagggaaaa
240
ggaagaaaaa aaaaaaaaaa gcaaagcttt gtattgtata aaaggtttgt gtccccaggc
300
tccctccccc aatcccttaa aacaatgaac tgcagttcta aaaagcaggg cagagaaggt
360
aaggagcagg tggggggaag gaggaagctc tcggggcctc ccttcaggct gtgactgggg
420
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480
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540
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600
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720
cactgcagcc tcaaactcct gggctctggc gatcctcccg cctcagcctc ccaagtagct
780
gagaccacag gcacgtgcca ccatgctcct agggaaggag cttgagaaga aactgccagg
840
agtgaaccag ggctggctgc tctgtgatgt tctctcccca cctcccctcc agctctcaac
900
ttggtggcag ggccggcacc ctgctctccc tcctaactcc cagcctgctg ctgcccccctt
960
ctgggaccct aatttctgg actttgagaa atgggctgcc cctgggggtg cctccaagag
1020
cccatttgag ggatcgggtg gggctgacct ctctgtcttc tttggatcat cgccttctca
1080
cactgtcctc cctcttgatt ctgaaaaatg gtcctgctgc ccatggagaa ccacagtaag
1140
```

```
atagatttct catgcagcta gtgaggggac ttctctcttc acccatttcc accttctcct
1200
attttccttt ttttttccttc tgttgagatg gagtctcact ctgtcaccca ggctggagtg
1260
cagtgtcgcg accttggctc actgcaacct ccacctccca ggttcaagca attctcccac
1320
ctcagcctcc aaagtagctg ggattacagg catgcgcaac catgcccagc taattttttgt
1380
aattttagta gagatgggtt ttcgcttagt agagatgggt gtttgccagg ctggtcccga
1440
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1500
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1560
catgcgctcc tgtgtacagg tgcataaaca catcagtgtg ccatccctca catgcatgtc
1620
gttccccacc cctccttccc agggcttctc ttggctccag cgttcctctg ggaccctctg
1680
cagatacagc ctgtgctgga ccccccagcca gggtgagggc tcattctgct ctgtcttccc
1740
cactgcctca gtttccccca aaagctgctt tcacgtcctt ctagtagggg gcctcccatg
1800
ggggcaagga tcccctttag gattcaatct ttcctctttg ggcagttttg gctttgagtc
1860
ccccagggat cagggtgaga atgaagaaga gctcagtgag cggaatgaca gcagctgggt
1920
gggtggtgtg gggagaggct gaggggaagg cagcccccc aggggggcct aaccgtggaa
1980
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2040
ttcccattcc actcggactg tgtccaagcg ggggctgtcc actgcggggg ctgcctcccc
2100
atcgggtcct aacagctcta agactgggag tggagttcct ggaggtgtgg ggaggggggc
2160
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2196
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<210> 5072
<211> 76
<212> PRT
<213> Homo sapiens
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```
<400> 5072
Met Glu Ser His Ser Val Thr Gln Ala Gly Val Gln Cys Arg Asp Leu
1               5                  10                  15
Gly Ser Leu Gln Pro Pro Pro Arg Phe Lys Gln Phe Ser His Leu
            20              25              30
Ser Leu Gln Ser Ser Trp Asp Tyr Arg His Ala Gln Pro Cys Pro Ala
        35              40              45
Asn Phe Cys Asn Phe Ser Arg Asp Gly Phe Ser Leu Ser Arg Asp Gly
    50              55              60
Cys Leu Pro Gly Trp Ser Arg Thr Pro Asp Leu Arg
65              70              75
```

<210> 5073
<211> 1712
<212> DNA
<213> Homo sapiens

<400> 5073
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tctgtgctgg tgaagctcct ggaagtgatg gaaggaatgg acaaggagac gtttgagttc
120
aagtttggga aggaactaac attcaccact gtactgagtg accaacaggt ggtggagctg
180
atccctgggg gtgcaggcat cgtcgtggga tatggggacc gttctcgttt catccaactg
240
gtccagaagg cacggctaga ggagagcaag gagcaggtgg cagctatgca ggcaggtctg
300
ctgaaggtgg taccacaggc tgtgctggac ttgctgacct ggcaagagtt ggagaagaaa
360
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480
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600
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720
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780
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960
tcttaagagg gaatcttcca caagcccagc acaagctgcc aggcctgagc tacttgaagg
1020
gggccatcta ggtccccaac ccatggactt tgcctccatt ttcagctccg cctttttct
1080
cctattttct ctctggcttt cttcagccat gactcacaac taaaaacata aaacactgga
1140
ggttagtgga ggcccctccc caagcaggga gcctgggatg ggcagggagt gatagccaaa
1200
ctccttggtc acctgctcca agaaggaagc agtagctgag cacctgccct cacatactgc
1260
tcttttcccc tctccctcca caccagagat gtggtgagct ctgttcttct accaacccag
1320
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1380
actctactac cacgacctcc ccatattcct cacttctcca tcacctccag cctgactccc
1440

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1500
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1560
ctatgcacac ccctgcccca gtttaccgtt cctccctcag ggcctccgtg acactccatg
1620
aaaagaagtt cttgcatacc ggaaagttga ataaatggat gaattcaaaa aaaaaaaaaa
1680
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aa
1712
```

```
<210> 5074
<211> 240
<212> PRT
<213> Homo sapiens
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```
<400> 5074
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 1               5                  10                  15
Pro Ala Val Asp Ser Val Leu Val Lys Leu Leu Glu Val Met Glu Gly
                20                  25                  30
Met Asp Lys Glu Thr Phe Glu Phe Lys Phe Gly Lys Glu Leu Thr Phe
                35                  40                  45
Thr Thr Val Leu Ser Asp Gln Gln Val Val Glu Leu Ile Pro Gly Gly
        50                  55                  60
Ala Gly Ile Val Val Gly Tyr Gly Asp Arg Ser Arg Phe Ile Gln Leu
65                  70                  75                  80
Val Gln Lys Ala Arg Leu Glu Glu Ser Lys Glu Gln Val Ala Ala Met
                85                  90                  95
Gln Ala Gly Leu Leu Lys Val Val Pro Gln Ala Val Leu Asp Leu Leu
                100                 105                 110
Thr Trp Gln Glu Leu Glu Lys Lys Val Cys Gly Asp Pro Glu Val Thr
                115                 120                 125
Val Asp Ala Leu Arg Lys Leu Thr Arg Phe Glu Asp Phe Glu Pro Ser
        130                 135                 140
Asp Ser Arg Val Gln Tyr Phe Trp Glu Ala Leu Asn Asn Phe Thr Asn
145                 150                 155                 160
Glu Asp Arg Ser Arg Phe Leu Arg Phe Val Thr Gly Arg Ser Arg Leu
                165                 170                 175
Pro Ala Arg Xaa Ser Thr Ser Thr Gln Thr Ser Trp Ala Thr Arg Pro
                180                 185                 190
Xaa Asp Ala Leu Pro Glu Ser Ser Thr Cys Ser Ser Thr Leu Phe Leu
        195                 200                 205
Pro His Tyr Ala Ser Ala Lys Val Cys Glu Glu Lys Leu Arg Tyr Ala
        210                 215                 220
Ala Tyr Asn Cys Val Ala Ile Asp Thr Asp Met Ser Pro Trp Glu Glu
225                 230                 235                 240
```

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<210> 5075
<211> 444
<212> DNA
<213> Homo sapiens
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<400> 5075
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120
ttactaaaaa gaataaacag tgctcggtga atggtgagag gaccagagag gaaatgggaa
180
taagtaatag gcatgtggcc agcagaaaaa ggagccaata tataagaaag caacaagtaa
240
actgctcccc tcgatggcag tgggaagcct gctgggatgg tgggggatca ggaaacttct
300
ctagccctgg aacactgaga gagacagaag tgatcactgc tgtgttggaa ctggggaggg
360
gtggggacca agtgaccgca gatcagaagt cactgaatat caacgccatg gagagagagc
420
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444


<210> 5076
<211> 90
<212> PRT
<213> Homo sapiens


<400> 5076
Met Gly Ile Ser Asn Arg His Val Ala Ser Arg Lys Arg Ser Gln Tyr
1               5                   10                  15
Ile Arg Lys Gln Gln Val Asn Cys Ser Pro Arg Trp Gln Trp Glu Ala
            20                  25                  30
Cys Trp Asp Gly Gly Gly Ser Gly Asn Phe Ser Ser Pro Gly Thr Leu
        35                  40                  45
Arg Glu Thr Glu Val Ile Thr Ala Val Leu Glu Leu Gly Arg Gly Gly
    50                  55                  60
Asp Gln Val Thr Ala Asp Gln Lys Ser Leu Asn Ile Asn Ala Met Glu
65                  70                  75                  80
Arg Glu Leu Ala Leu Ser Leu Arg Val Ala
                85                  90


<210> 5077
<211> 2352
<212> DNA
<213> Homo sapiens


<400> 5077
tttttttttt ttttttttcaa atgcagcata ttttaatttg tttcaaataa agcaatatat
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gtatatatat tttttcagaa aaacaccaga tgttaaattc tacaaaagcg catgtgtcct
120
cagcagatca tgtttgtctg attattaaga attctttttt gtaacattaa ctctctaaag
180
acaatcaatg gactgacatc actgctacaa cacaggttgc taactgagcc tctgatcttc
240
agccacatct tgattttcct aataatgagt aaatactgcc tggctaaaat gctgcaaagt
300
cttgatgaga gaaagcatca acagatcaag caaagccatg aaaattatga agcaagctag
360
```

```
agctgattat tagaattagt aaaaatgatt aagagaggat gacacaacca tacgggattt
420
gtatattctg attgacactc ttttggcagc gaattgggtc agcacctcgg gcagggaacc
480
aaaactgagt gaaaactgct cttttttcctc ctagctcagg ccaccaacgt cacagccggg
540
actgagagaa ctgctgcatc tgtggaaact tctattctcg tggggcagag attgcactgt
600
gaaaccctac cgacactacc ccggaagggc ctggcctccg aggtgtctgc agcgtgctgc
660
cttcgccggg gcttttcaga atgggccggg gcctcggggg tcttcatccc caaggaagcc
720
tcttgatttt tggcaccgcc tttgttttttg ggccggaagc cgttgtgcgg ctgtcttctg
780
tgttcgtggc ggctgttgcc ctttcccagt ggctcggctt cattcccact gccctgcgac
840
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1080
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1140
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1200
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1260
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1320
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1380
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1440
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1500
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1560
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1620
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1680
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1740
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1800
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1860
cagccattca tggggccgtt ttgaatctgt ggtggctgcg gctgcagggg ccctgcctca
1920
ggcctctcca ccttgtcttt agcatctttg ttgccttgat gctgcttgga cttgcttctt
1980
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tttctttttat tgttcttctt ttttcctgtc atattccatt cttttagaac ttgaattgca
2040
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2100
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2160
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2220
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2280
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2340
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2352
```

```
<210> 5078
<211> 558
<212> PRT
<213> Homo sapiens
```

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<400> 5078
Met Ala Glu Leu Asn Thr His Val Asn Val Lys Glu Lys Ile Tyr Ala
1               5                   10                  15
Val Arg Ser Val Val Pro Asn Lys Ser Asn Asn Glu Ile Val Leu Val
            20                  25                  30
Leu Gln Gln Phe Asp Phe Asn Val Asp Lys Ala Val Gln Ala Phe Val
        35                  40                  45
Asp Gly Ser Ala Ile Gln Val Leu Lys Glu Trp Asn Met Thr Gly Lys
    50                  55                  60
Lys Lys Asn Asn Lys Arg Lys Arg Ser Lys Ser Lys Gln His Gln Gly
65                  70                  75                  80
Asn Lys Asp Ala Lys Asp Lys Val Glu Arg Pro Glu Ala Gly Pro Leu
                85                  90                  95
Gln Pro Gln Pro Pro Gln Ile Gln Asn Gly Pro Met Asn Gly Cys Glu
            100                 105                 110
Lys Asp Ser Ser Ser Thr Asp Ser Ala Asn Glu Lys Pro Ala Leu Ile
        115                 120                 125
Pro Arg Glu Lys Lys Ile Ser Ile Leu Glu Glu Pro Ser Lys Ala Leu
    130                 135                 140
Arg Gly Val Thr Glu Gly Asn Arg Leu Leu Gln Gln Lys Leu Ser Leu
145                 150                 155                 160
Asp Gly Asn Pro Lys Pro Ile His Gly Thr Thr Glu Arg Ser Asp Gly
                165                 170                 175
Leu Gln Trp Ser Ala Glu Gln Pro Cys Asn Pro Ser Lys Pro Lys Ala
            180                 185                 190
Lys Thr Ser Pro Val Lys Ser Asn Thr Pro Ala Ala His Leu Glu Ile
            195                 200                 205
Lys Pro Asp Glu Leu Ala Lys Lys Arg Gly Pro Asn Ile Glu Lys Ser
    210                 215                 220
Val Lys Asp Leu Gln Arg Cys Thr Val Ser Leu Thr Arg Tyr Arg Val
225                 230                 235                 240
Met Ile Lys Glu Glu Val Asp Ser Ser Val Lys Lys Ile Lys Ala Ala
                245                 250                 255
Phe Ala Glu Leu His Asn Cys Ile Ile Asp Lys Glu Val Ser Leu Met
```

```
                   260                    265                    270
    Ala Glu Met Asp Lys Val Lys Glu Glu Ala Met Glu Ile Leu Thr Ala
                275                    280                    285
    Arg Gln Lys Lys Ala Glu Glu Leu Lys Arg Leu Thr Asp Leu Ala Ser
            290                    295                    300
    Gln Met Ala Glu Met Gln Leu Ala Glu Leu Arg Ala Glu Ile Lys His
    305                    310                    315                    320
    Phe Val Ser Glu Arg Lys Tyr Asp Glu Glu Leu Gly Lys Ala Ala Arg
                    325              .     330                    335
    Phe Ser Cys Asp Ile Glu Gln Leu Lys Ala Gln Ile Met Leu Cys Gly
                340                    345                    350
    Glu Ile Thr His Pro Lys Asn Asn Tyr Ser Ser Arg Thr Pro Cys Ser
                355                    360                    365
    Ser Leu Leu Pro Leu Leu Asn Ala His Ala Ala Thr Ser Gly Lys Gln
            370                    375                    380
    Ser Asn Phe Ser Arg Lys Ser Ser Thr His Asn Lys Pro Ser Glu Gly
    385                    390                    395                    400
    Lys Ala Ala Asn Pro Lys Met Val Ser Ser Leu Pro Ser Thr Ala Asp
                    405                    410                    415
    Pro Ser His Gln Thr Met Pro Ala Asn Lys Gln Asn Gly Ser Ser Asn
                420                    425                    430
    Gln Arg Arg Arg Phe Asn Pro Gln Tyr His Asn Asn Arg Leu Asn Gly
            435                    440                    445
    Pro Ala Lys Ser Gln Gly Ser Gly Asn Glu Ala Glu Pro Leu Gly Lys
        450                    455                    460
    Gly Asn Ser Arg His Glu His Arg Arg Gln Pro His Asn Gly Phe Arg
    465                    470                    475                    480
    Pro Lys Asn Lys Gly Gly Ala Lys Asn Gln Glu Ala Ser Leu Gly Met
                    485                    490                    495
    Lys Thr Pro Glu Ala Pro Ala His Ser Glu Lys Pro Arg Arg Arg Gln
                500                    505                    510
    His Ala Ala Asp Thr Ser Glu Ala Arg Pro Phe Arg Gly Ser Val Gly
            515                    520                    525
    Arg Val Ser Gln Cys Asn Leu Cys Pro Thr Arg Ile Glu Val Ser Thr
        530                    535                    540
    Asp Ala Ala Val Leu Ser Val Pro Ala Val Thr Leu Val Ala
    545                    550                    555
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<210> 5079
<211> 1338
<212> DNA
<213> Homo sapiens

<400> 5079
ggcctccctc gttgccccag cctcgcgggc cgcctaactg ccccgttcca agggtgccac
60
cggaccccgc tggagaggaa cttctccgtt ggctgatttc atcaccaccc attcccgatt
120
ccacgtttcc tttaagcggg gctggcggag ccgcaaggcg gcaaggaact ggattgcgat
180
tggtcagcac gtgcctcggt cggcggtaca attggctgag gcgctgggcc ttgggaagca
240
ttccccgacg ggattggtcg tcgctctcgc agagcccgcc tcccgcagta caagcggccc
300
```

ccgggtcggg tgggaggagg ggactccggg aggaggaaca tggcggtggc ggacctcgct
360
ctcattcctg atgtggacat cgactccgac ggcgtcttca agtatgtgct gatccgagtc
420
cactcggctc cccgctccgg ggctccggct gcagagagca aggagatcgt gcgcggctac
480
aagtgggctg agtaccatgc ggacatctac gacaaagtgt cgggcgacat gcagaagcaa
540
ggctgcgact gtgagtgtct gggcggcggg cgcatctccc accagagtca ggacaagaag
600
attcacgtgt acggctattc catggtgagc cgcagccccg tcccgccctg ccggaggccc
660
cagtaccagc ttcgaggccc acctgagcct gctgccctga cccgtggccc cagctgagca
720
cgcaggcttc ctggggttct cccagggtcg gcggcagagc cctccctcca gggcccattg
780
tgttcctgca ttcccccatg gagcacacgc cagacctgag gggtgggacg gacacccca
840
ggcatggccg gctgtctcct ctccctgcct tgggaggcct tgctgggctc tagctgtcct
900
ccagcacttt gggccctggg cccccagagg cagtcagtac ctgggtggag ctcagagtcc
960
ccacctgtgc tcttcacaaa aaccaccagc agatgagacc cacgtgcgtc cctctgggcg
1020
cctcaggccc caggatccac catcaaggcc tatggtcctg cccagcacgc catttcaact
1080
gagaaaatca aagccaagta ccccgactac gaggtcacct gggctaacga cggctactga
1140
gcactcccag cccggggcct gctgcctcca gcagccactt cagagccccc gcctttgcct
1200
gcactcctct tgcagggctg gccctgcctg ctcctgcggc agcctctggt gacgtgctgt
1260
ccaccaggcc ttggagacag gctagcctgg ccacagaatt aaacgtgttg ccacaccaaa
1320
aaaaaaaaaa aaaaaaaa
1338

<210> 5080
<211> 165
<212> PRT
<213> Homo sapiens

<400> 5080
Gly Ala Gly Pro Trp Glu Ala Phe Pro Asp Gly Ile Gly Arg Arg Ser
1   5   10   15
Arg Arg Ala Arg Leu Pro Gln Tyr Lys Arg Pro Pro Gly Arg Val Gly
           20   25   30
Gly Gly Asp Ser Gly Arg Arg Asn Met Ala Val Ala Asp Leu Ala Leu
           35   40   45
Ile Pro Asp Val Asp Ile Asp Ser Asp Gly Val Phe Lys Tyr Val Leu
      50   55   60
Ile Arg Val His Ser Ala Pro Arg Ser Gly Ala Pro Ala Ala Glu Ser
65   70   75   80
Lys Glu Ile Val Arg Gly Tyr Lys Trp Ala Glu Tyr His Ala Asp Ile

4262

```
                     85                    90                    95
Tyr Asp Lys Val Ser Gly Asp Met Gln Lys Gln Gly Cys Asp Cys Glu
                100                   105                   110
Cys Leu Gly Gly Gly Arg Ile Ser His Gln Ser Gln Asp Lys Lys Ile
            115                   120                   125
His Val Tyr Gly Tyr Ser Met Val Ser Arg Ser Pro Val Pro Pro Cys
        130                   135                   140
Arg Arg Pro Gln Tyr Gln Leu Arg Gly Pro Pro Glu Pro Ala Ala Leu
145                   150                   155                   160
Thr Arg Gly Pro Ser
                165
```

```
<210> 5081
<211> 561
<212> DNA
<213> Homo sapiens
```

```
<400> 5081
nncggccggc ctgggctcgg gggctccggg ctctgggctc tgggtgcgcg gaccgggcca
60
ggctgcttga agacctcgcg acctgtgtca gcagagccgc cctgcaccac catgtgcatc
120
atcttcttta agtttgatcc tcgccctgtt tccaaaaacg cgtacaggta accccctcgc
180
tctgcatctg ctgcgccctg cagggtcctg ggtgcccagc cagttctcat gccacccaag
240
ctgctgtgtg caggaaggtg tgtgggccag gacggggctg cacaggcctg gcactgccct
300
ccaggacagg gtcactcagt gtgggatgct gtcagaatgc ctctcggggc ggggactcca
360
gtcaatgtac aaagacgtga agactcagcc acagaaggca gccacaggct catcttggca
420
gccaacaggg atgaattcta cagccgaccc tccaagttag ctgacttctg ggggaacaac
480
aacgagatcc tcagtgggct ggacatggag gaaggcaagg aaggaggcac atggctgggc
540
atcagcacac gtggcaagct g
561
```

```
<210> 5082
<211> 111
<212> PRT
<213> Homo sapiens
```

```
<400> 5082
Met Pro Pro Lys Leu Leu Cys Ala Gly Arg Cys Val Gly Gln Asp Gly
1               5                   10                  15
Ala Ala Gln Ala Trp His Cys Pro Pro Gly Gln Gly His Ser Val Trp
            20                  25                  30
Asp Ala Val Arg Met Pro Leu Gly Ala Gly Thr Pro Val Asn Val Gln
        35                  40                  45
Arg Arg Glu Asp Ser Ala Thr Glu Gly Ser His Arg Leu Ile Leu Ala
    50                  55                  60
Ala Asn Arg Asp Glu Phe Tyr Ser Arg Pro Ser Lys Leu Ala Asp Phe
```

```
         65                    70                    75                    80
    Trp Gly Asn Asn Asn Glu Ile Leu Ser Gly Leu Asp Met Glu Glu Gly
                        85                    90                    95
    Lys Glu Gly Gly Thr Trp Leu Gly Ile Ser Thr Arg Gly Lys Leu
                    100                   105                   110
```

<210> 5083
<211> 1856
<212> DNA
<213> Homo sapiens

<400> 5083
nnggccacta ggcacgggac agagcagtcg gtgacaggac agagcagtcg gtgacgggac
60
acagtggttg gtgacgggac agagcggtcg gtgacagcct caagggcttc agcaccgcgc
120
ccatggcaga gccagaccga ctcagattca gactctgagg gaggagccgc tggtggagaa
180
gcagacatgg acttcctgcg gaacttattc tcccagacgc tcagcctggg cagccagaag
240
gagcgtctgc tggacgagct gaccttggaa ggggtggccc ggtacatgca gagcgaacgc
300
tgtcgcagag tcatctgttt ggtgggagct ggaatctcca catccgcagg catccccgac
360
tttcgctctc catccaccgg cctctatgac aacctagaga agtaccatct tccctaccca
420
gaggccatct ttgagatcag ctatttcaag aaacatccgg aacccttctt cgccctcgcc
480
aaggaactct atcctgggca gttcaagcca accatctgtc actacttcat gcgcctgctg
540
aaggacaagg ggctactcct gcgctgctac acgcagaaca tagatacccct ggagcgaata
600
gccgggctgg aacaggagga cttggtggag gcgcacggca ccttctacac atcacactgc
660
gtcagcgcca gctgccggca cgaatacccg ctaagctgga tgaaagagaa gatcttctct
720
gaggtgacgc ccaagtgtga agactgtcag agcctggtga gcctgatat cgtctttttt
780
ggtgagagcc tcccagcgcg tttcttctcc tgtatgcagt cagacttcct gaaggtggac
840
ctcctcctgg tcatgggtac ctccttgcag gtgcagccct tgcctccct catcagcaag
900
gcacccctct ccacccctcg cctgctcatc aacaaggaga aagctggcca gtcggaccct
960
ttcctgggga tgattatggg cctcggagga ggcatggact ttgactccaa gaaggcctac
1020
agggacgtgg cctggctggg tgaatgcgac cagggctgcc tggcccttgc tgagctcctt
1080
ggatggaaga aggagctgga ggaccttgtc cggagggagc acgccagcat agatgcccag
1140
tcggggggcgg gggtccccaa ccccagcact tcagcttccc ccaagaagtc cccgccacct
1200
gccaaggacg aggccaggac aacagagagg gagaaacccc agtgacagct gcatctccca
1260
```

```
ggcgggatgt cgagctcctc agggacagct gagccccaac cgggcctggc cccctcttaa
1320
ccagcagttc ttgtctgggg agctcagaac atcccccaat ctcttacagc tccctcccca
1380
aaactggggt cccagcaacc ctggcccccca accccagcaa atctctaaca cctcctagag
1440
gccaaggctt aaacaggcat ctctaccagc cccactgtct ctaaccactc ctgggctaag
1500
gagtaacctc cctcatctct aactgccccc acggggccag ggctaccca gaacttttaa
1560
ctcttccagg acagggagct tcgggccccc actctgtctc ctgccccgg gggcctgtgg
1620
ctaagtaaac catacctaac ctaccccagt gtgggtgtgg gcctctgaat ataacccaca
1680
cccagcgtag ggggagtctg agccgggagg gctcccgagt ctctgccttc agctcccaaa
1740
gtgggtggtg ggccccccttc acgtgggacc cacttcccat gctggatggg cagaagacat
1800
tgcttattgg agacaaatta aaaacaaaaa caactaacaa aaaaaaaaaa aaaaaa
1856


<210> 5084
<211> 396
<212> PRT
<213> Homo sapiens

<400> 5084
Arg Asp Thr Val Val Gly Asp Gly Thr Glu Arg Ser Val Thr Ala Ser
1               5                   10                  15
Arg Ala Ser Ala Pro Arg Pro Trp Gln Ser Gln Thr Asp Ser Asp Ser
            20                  25                  30
Asp Ser Glu Gly Gly Ala Ala Gly Gly Glu Ala Asp Met Asp Phe Leu
        35                  40                  45
Arg Asn Leu Phe Ser Gln Thr Leu Ser Leu Gly Ser Gln Lys Glu Arg
    50                  55                  60
Leu Leu Asp Glu Leu Thr Leu Glu Gly Val Ala Arg Tyr Met Gln Ser
65                  70                  75                  80
Glu Arg Cys Arg Arg Val Ile Cys Leu Val Gly Ala Gly Ile Ser Thr
                85                  90                  95
Ser Ala Gly Ile Pro Asp Phe Arg Ser Pro Ser Thr Gly Leu Tyr Asp
            100                 105                 110
Asn Leu Glu Lys Tyr His Leu Pro Tyr Pro Glu Ala Ile Phe Glu Ile
            115                 120                 125
Ser Tyr Phe Lys Lys His Pro Glu Pro Phe Phe Ala Leu Ala Lys Glu
        130                 135                 140
Leu Tyr Pro Gly Gln Phe Lys Pro Thr Ile Cys His Tyr Phe Met Arg
145                 150                 155                 160
Leu Leu Lys Asp Lys Gly Leu Leu Leu Arg Cys Tyr Thr Gln Asn Ile
                165                 170                 175
Asp Thr Leu Glu Arg Ile Ala Gly Leu Glu Gln Glu Asp Leu Val Glu
            180                 185                 190
Ala His Gly Thr Phe Tyr Thr Ser His Cys Val Ser Ala Ser Cys Arg
        195                 200                 205
His Glu Tyr Pro Leu Ser Trp Met Lys Glu Lys Ile Phe Ser Glu Val
```

4265

```
      210                    215                    220
Thr Pro Lys Cys Glu Asp Cys Gln Ser Leu Val Lys Pro Asp Ile Val
225                    230                    235                    240
Phe Phe Gly Glu Ser Leu Pro Ala Arg Phe Phe Ser Cys Met Gln Ser
                 245                    250                    255
Asp Phe Leu Lys Val Asp Leu Leu Leu Val Met Gly Thr Ser Leu Gln
             260                    265                    270
Val Gln Pro Phe Ala Ser Leu Ile Ser Lys Ala Pro Leu Ser Thr Pro
         275                    280                    285
Arg Leu Leu Ile Asn Lys Glu Lys Ala Gly Gln Ser Asp Pro Phe Leu
     290                    295                    300
Gly Met Ile Met Gly Leu Gly Gly Gly Met Asp Phe Asp Ser Lys Lys
305                    310                    315                    320
Ala Tyr Arg Asp Val Ala Trp Leu Gly Glu Cys Asp Gln Gly Cys Leu
                 325                    330                    335
Ala Leu Ala Glu Leu Leu Gly Trp Lys Lys Glu Leu Glu Asp Leu Val
             340                    345                    350
Arg Arg Glu His Ala Ser Ile Asp Ala Gln Ser Gly Ala Gly Val Pro
         355                    360                    365
Asn Pro Ser Thr Ser Ala Ser Pro Lys Lys Ser Pro Pro Pro Ala Lys
     370                    375                    380
Asp Glu Ala Arg Thr Thr Glu Arg Glu Lys Pro Gln
385                    390                    395
```

<210> 5085
<211> 2964
<212> DNA
<213> Homo sapiens

<400> 5085
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nactgcccat ccccggttgt cccacttttg ttcgcctctc ttcggccctc tactcaagag
60
ctccgtctcc gtctcgccct cctcgaagtc ctcgtcgcgc gcccgcgacc caggtcgccc
120
tgaaatctag cccgtccgag cgcgagtcca acggccgcgg ccgcaccaag gccccctcag
180
accgtgccat gggtgacagt gatgacgagt acgatcgaag gcgcagggac aagttcagaa
240
gagagcgcag cgactacgac cgttcccgcg agagagatga aagacgtcga ggggacgatt
300
ggaatgacag agagtgggac cgtggccgtg agcgccgtag tcggggtgaa tatcgggact
360
atgaccggaa tcggcgagag cgcttctcgc cacctcgcca cgaactcagc ccgccacaga
420
agcgcatgag gagagactgg gatgagcaca gctctgaccc ataccacagt ggctatgaga
480
tgccctatgc tgnggggggg tggggcccca acttatggcc cccctcagcc ctggggccac
540
cctgacgtcc acatcatgca gcaccatgtc ctgcctatcc aggccaggct gggcagcatt
600
gcagagattg acctgggtgt gccgccgccc gtgatgaaga ccttcaagga gtttctcctc
660
tccctggatg actcggtgga tgagacggag gccgtcaagc gctataatga ctacaagctg
720
```

gatttccgga ggcaacagat gcaggatttc ttcctggcgc acaaagatga ggagtggttt
780

cggtctaagt accacccaga tgaggtgggg aagcgtcggc aggaggcccg ggggccctg
840

caaaaccgac tgagggtctt cctgtccctc atggagactg gctggtttga taaccttctc
900

ctggacatag acaaagctga tgccattgtc aagatgctgg atgcagccgt gattaagatg
960

gaaggaggca cggagaatga tcttcgcatc ctggagcagg aggaggagga ggagcaggca
1020

ggaaagcctg gggagcccag caagaaagaa gaaggacggg ctggagcagg cctaggggac
1080

ggggagcgca aaaccaacga caaggatgag aagaaggaag acggcaagca ggctgagaat
1140

gacagttcta atgatgacaa aacaaagaag tcggagggtg atggggacaa ggaagagaag
1200

aaagaagact ccgagaagga agccaaaaag agtagcaaga agcggaaccg gaagcacagt
1260

ggtgacgaca gctttgacga gggcagcgtg tcagagtctg agtcggagtc agagagcggc
1320

caggctgagg aggagaagga ggaggccgaa gaagcgctca aggagaagga gaagcccaag
1380

gaagaagaat gggagaagcc caaggacgcc gcggggctgg agtgcaagcc gcggccgctg
1440

cataagacct gctccctctt catgcgcaac atcgcgccca acatctcccg ggccgagatc
1500

atctcccttt gtaaaaggta cccaggcttt atgcgggtgg cgctctcaga gccccagcca
1560

gagaggaggt ttttccgtcg tggctgggtg accttcgacc gcagtgttaa cattaaagag
1620

atctgttgga acctgcagaa catccgtctc cgggagtgtg agctgagccc tggtgtgaac
1680

agggacctga cccggcgcgt tcgcaacatc aacggcatca cccagcacaa gcagattgtg
1740

cgcaacgaca tcaagctggc ggccaagctg atccacacgc tggatgacag gacacagctt
1800

tgggcctcag aaccagggac gcctcccctg cccacgagcc tgccctcgca aaacccgatc
1860

ttgaagaata tcaccgacta cctgatcgag gaagtaagcg ccgaggagga ggagctgctg
1920

gggagcagcg ggggcgctcc tcctgaggag cctcctaagg aagggaaccc ggcagagatc
1980

aacgtggagc gggatgagaa gttgattaag gtcttggaca agctcctcct ttacctgcgc
2040

atcgtgcatt ccttggatta ttacaacacc tgtgagtacc ccaacgagga cgagatgccc
2100

aatcgctgtg ggatcatcca cgttcggggg cccatgccac ccaaccgcat cagtcacggg
2160

gaagtgctgg agtggcagaa gacttttgag gagaagctca cgccgttgct gagtgtgcgg
2220

gagtcactct cagaggaaga ggcccagaag atggggcgca agacccaga gcaggaagtg
2280

gagaagttcg tcacctccaa cacgcaggaa ctgggcaagg ataagtggct gtgtcctctc
2340

```
agtggcaaga aattcaaggg tcctgagttt gtgcgcaaac atatcttcaa caagcatgca
2400
gagaaaattg aggaagtgaa aaaggaagtc gcgttttta acaacttcct cactgatgct
2460
aagcgcccag ctctgcctga gatcaagcca gcccagccac ctggccccgc ccagatactc
2520
cccccaggtt tgaccccagg actcccctac ccacaccaga ctccccaggg cctgatgccc
2580
tatggtcagc cccggccccc gatcttgggc tatggagctg gtgctgtccg ccctgcagtc
2640
cccacaggag gccctccata cccccatgcc ccgtatggtg ctggtcgagg gaactatgat
2700
gccttccgag gccagggagg ttatcctggg aaacctcgca acaggatggt tcgtggagac
2760
ccaagggcca ttgtggaata tcgggacctg gatgccccag acgatgttga tttcttttga
2820
gccgtccccc gttcctcagt cctgtatcat ccatacttgt actaccttgt cctatgaagc
2880
tctgagaatt ttttgtacga tcagccttac tgctaataaa agcacttcca cagggaaaaa
2940
aaaaaaaaaa aaaaaaagtc gacg
2964
```

```
<210> 5086
<211> 792
<212> PRT
<213> Homo sapiens

<400> 5086
Met Ser Thr Ala Leu Thr His Thr Thr Val Ala Met Arg Cys Pro Met
1               5                   10                  15
Leu Xaa Gly Gly Gly Pro Thr Tyr Gly Pro Pro Gln Pro Trp Gly
            20                  25                  30
His Pro Asp Val His Ile Met Gln His His Val Leu Pro Ile Gln Ala
            35                  40                  45
Arg Leu Gly Ser Ile Ala Glu Ile Asp Leu Gly Val Pro Pro Pro Val
    50                  55                  60
Met Lys Thr Phe Lys Glu Phe Leu Leu Ser Leu Asp Asp Ser Val Asp
65                  70                  75                  80
Glu Thr Glu Ala Val Lys Arg Tyr Asn Asp Tyr Lys Leu Asp Phe Arg
                85                  90                  95
Arg Gln Gln Met Gln Asp Phe Phe Leu Ala His Lys Asp Glu Glu Trp
            100                 105                 110
Phe Arg Ser Lys Tyr His Pro Asp Glu Val Gly Lys Arg Arg Gln Glu
        115                 120                 125
Ala Arg Gly Ala Leu Gln Asn Arg Leu Arg Val Phe Leu Ser Leu Met
    130                 135                 140
Glu Thr Gly Trp Phe Asp Asn Leu Leu Leu Asp Ile Asp Lys Ala Asp
145                 150                 155                 160
Ala Ile Val Lys Met Leu Asp Ala Ala Val Ile Lys Met Glu Gly Gly
                165                 170                 175
Thr Glu Asn Asp Leu Arg Ile Leu Glu Gln Glu Glu Glu Glu Glu Gln
            180                 185                 190
Ala Gly Lys Pro Gly Glu Pro Ser Lys Lys Glu Glu Gly Arg Ala Gly
```

```
            195                    200                    205
Ala Gly Leu Gly Asp Gly Glu Arg Lys Thr Asn Asp Lys Asp Glu Lys
    210                    215                    220
Lys Glu Asp Gly Lys Gln Ala Glu Asn Asp Ser Ser Asn Asp Asp Lys
225                    230                    235                    240
Thr Lys Lys Ser Glu Gly Asp Gly Asp Lys Glu Glu Lys Lys Glu Asp
                245                    250                    255
Ser Glu Lys Glu Ala Lys Lys Ser Ser Lys Lys Arg Asn Arg Lys His
            260                    265                    270
Ser Gly Asp Asp Ser Phe Asp Glu Gly Ser Val Ser Glu Ser Glu Ser
        275                    280                    285
Glu Ser Glu Ser Gly Gln Ala Glu Glu Glu Lys Glu Glu Ala Glu Glu
    290                    295                    300
Ala Leu Lys Glu Lys Glu Lys Pro Lys Glu Glu Glu Trp Glu Lys Pro
305                    310                    315                    320
Lys Asp Ala Ala Gly Leu Glu Cys Lys Pro Arg Pro Leu His Lys Thr
                325                    330                    335
Cys Ser Leu Phe Met Arg Asn Ile Ala Pro Asn Ile Ser Arg Ala Glu
            340                    345                    350
Ile Ile Ser Leu Cys Lys Arg Tyr Pro Gly Phe Met Arg Val Ala Leu
        355                    360                    365
Ser Glu Pro Gln Pro Glu Arg Arg Phe Phe Arg Arg Gly Trp Val Thr
    370                    375                    380
Phe Asp Arg Ser Val Asn Ile Lys Glu Ile Cys Trp Asn Leu Gln Asn
385                    390                    395                    400
Ile Arg Leu Arg Glu Cys Glu Leu Ser Pro Gly Val Asn Arg Asp Leu
            405                    410                    415
Thr Arg Arg Val Arg Asn Ile Asn Gly Ile Thr Gln His Lys Gln Ile
        420                    425                    430
Val Arg Asn Asp Ile Lys Leu Ala Ala Lys Leu Ile His Thr Leu Asp
        435                    440                    445
Asp Arg Thr Gln Leu Trp Ala Ser Glu Pro Gly Thr Pro Pro Leu Pro
    450                    455                    460
Thr Ser Leu Pro Ser Gln Asn Pro Ile Leu Lys Asn Ile Thr Asp Tyr
465                    470                    475                    480
Leu Ile Glu Glu Val Ser Ala Glu Glu Glu Leu Leu Gly Ser Ser
            485                    490                    495
Gly Gly Ala Pro Pro Glu Glu Pro Lys Glu Gly Asn Pro Ala Glu
        500                    505                    510
Ile Asn Val Glu Arg Asp Glu Lys Leu Ile Lys Val Leu Asp Lys Leu
    515                    520                    525
Leu Leu Tyr Leu Arg Ile Val His Ser Leu Asp Tyr Tyr Asn Thr Cys
    530                    535                    540
Glu Tyr Pro Asn Glu Asp Glu Met Pro Asn Arg Cys Gly Ile Ile His
545                    550                    555                    560
Val Arg Gly Pro Met Pro Pro Asn Arg Ile Ser His Gly Glu Val Leu
                565                    570                    575
Glu Trp Gln Lys Thr Phe Glu Glu Lys Leu Thr Pro Leu Leu Ser Val
            580                    585                    590
Arg Glu Ser Leu Ser Glu Glu Glu Ala Gln Lys Met Gly Arg Lys Asp
        595                    600                    605
Pro Glu Gln Glu Val Glu Lys Phe Val Thr Ser Asn Thr Gln Glu Leu
    610                    615                    620
Gly Lys Asp Lys Trp Leu Cys Pro Leu Ser Gly Lys Lys Phe Lys Gly
```

```
           625                     630                     635                     640
     Pro Glu Phe Val Arg Lys His Ile Phe Asn Lys His Ala Glu Lys Ile
                     645                     650                     655
     Glu Glu Val Lys Lys Glu Val Ala Phe Phe Asn Asn Phe Leu Thr Asp
                     660                     665                     670
     Ala Lys Arg Pro Ala Leu Pro Glu Ile Lys Pro Ala Gln Pro Pro Gly
                 675                     680                    ·685
     Pro Ala Gln Ile Leu Pro Pro Gly Leu Thr Pro Gly Leu Pro Tyr Pro
                 690                     695                     700
     His Gln Thr Pro Gln Gly Leu Met Pro Tyr Gly Gln Pro Arg Pro Pro
     705                     710                     715                     720
     Ile Leu Gly Tyr Gly Ala Gly Ala Val Arg Pro Ala Val Pro Thr Gly
                     725                     730                     735
     Gly Pro Pro Tyr Pro His Ala Pro Tyr Gly Ala Gly Arg Gly Asn Tyr
                     740                     745                     750
     Asp Ala Phe Arg Gly Gln Gly Gly Tyr Pro Gly Lys Pro Arg Asn Arg
                 755                     760                     765
     Met Val Arg Gly Asp Pro Arg Ala Ile Val Glu Tyr Arg Asp Leu Asp
                 770                     775                     780
     Ala Pro Asp ·Asp Val Asp Phe Phe
     785                     790
```

```
<210> 5087
<211> 4949
<212> DNA
<213> Homo sapiens

<400> 5087
gcctaactgc cccgttccaa gggtgccacc ggaccccgct ggagaggaac ttctccgttg
60
gctgatttca tcaccaccca ttcccgattc cacgtttcct ttaagcgggt ctggcggacg
120
caaggcgtca aggaactgga ttgcgattgg tcagcacgtg cctcggtcgg cggtacaatt
180
ggctgaggcg ctgggccttg ggaagcattc cccgacggga ttggtcgtcg ctctcgcaga
240
gcccgcctcc cgcagtacaa gcggcccccg ggtcgggtgg gaggagggga ctccgggagg
300
aggaacatgg cggtggcgga cctcgctctc attcctgatg tggacatcga ctccgacggc
360
gtcttcaagt atgtgctgat ccgagtccac tcggctcccc gctccggggc tccggctgca
420
gagagcaagg agatcgtgcg cggctacaag tgggctgagt accatgcgga catctacgac
480
aaagtgtcgg gcgacatgca gaagcaaggc tgcgactgtg agtgtctggg cggcgggcgc
540
atctcccacc agagtcagga caagaagatt cacgtgtacg ctattccat ggcctatggt
600
cctgcccagc acgccatttc aactgagaaa atcaaagcca agtaccccga ctacgaggtc
660
acctgggcta cgacggcta ctgagcactc ccagcccggg gcctgctgcc tccagcagcc
720
acttcagagc ccccgccttt gcctgcactc ctcttgcagg gctggccctg cctgctcctg
780
```

```
cggcagcctc tggtgacgtg ctgtccacca ggccttggag acaggctagc ctggccacag
840
aattaaacgt gttgccacac ctgccggctt ctgaactctg tccttggctt cctgcaccct
900
gcgtcaccac ctccggggc ccccagaccc taactaaagc agggaccctg tatctggcac
960
cggacagcac ctggctgctc aggacgaatg aatgacggcg tgatcctcca cagcctgact
1020
taaaggcacc ctgtgtggcc gcactgctcc ctctggccca accatgcctc tgtccagcca
1080
cctgctgccc gccttggtcc tgttcctggg agccctggcc aggccgtgtg caacttcgtg
1140
tgtgactgca gggactgctc agatgaggcc cagtgtggtt accacggggc ctcgcccacc
1200
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2400
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4271

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```

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4949
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```
<210> 5088
<211> 465
<212> PRT
<213> Homo sapiens
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<400> 5088
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1               5                   10                  15
Leu Val Gly Gly Ala Gln Gly Glu Gly Gly Trp Ala Ala Gly Asp Lys
            20                  25                  30
Gln Gly Arg Ser Cys Pro Gly Thr Pro Asp Ile Ala Asp Val Ala Glu
        35                  40                  45
Leu Arg Val Glu Leu Thr His Gly Ala Glu Thr Leu Thr Leu Trp Gln
    50                  55                  60
Ser Thr Gly Pro Trp Xaa Pro Trp Xaa Trp Gln Glu Leu Ala Val Thr
65                  70                  75                  80
Thr Gly Arg Ile Arg Gly Asp Phe Arg Val Thr Phe Ser Ala Thr Arg
                85                  90                  95
Asn Ala Thr His Arg Gly Ala Val Ala Leu Asp Asp Leu Glu Phe Trp
            100                 105                 110
Asp Cys Gly Leu Pro Thr Pro Gln Ala Asn Cys Pro Pro Gly His His
```

```
              115                       120                       125
His Cys Gln Asn Lys Val Cys Val Glu Pro Gln Gln Leu Cys Asp Gly
      130                       135                       140
Glu Asp Asn Cys Gly Asp Leu Ser Asp Glu Asn Pro Leu Thr Cys Gly
145                       150                       155                       160
Arg His Ile Ala Thr Asp Phe Glu Thr Gly Leu Gly Pro Trp Asn Arg
                  165                       170                       175
Ser Glu Gly Trp Ser Arg Asn His Arg Ala Gly Gly Pro Glu Arg Pro
              180                       185                       190
Ser Trp Pro Arg Arg Asp His Ser Arg Asn Ser Ala Xaa Arg Leu Val
              195                       200                       205
Phe Tyr Gln Tyr Leu Ser Gly Ser Glu Ala Gly Cys Leu Gln Leu Phe
      210                       215                       220
Leu Gln Thr Leu Gly Pro Gly Ala Pro Arg Ala Pro Val Leu Leu Arg
225                       230                       235                       240
Arg Arg Arg Gly Glu Leu Gly Thr Ala Trp Val Arg Asp Arg Val Asp
                  245                       250                       255
Ile Gln Ser Ala Tyr Pro Phe Gln Ile Leu Leu Ala Gly Gln Thr Gly
                  260                       265                       270
Pro Gly Gly Val Val Gly Leu Asp Asp Leu Ile Leu Ser Asp His Cys
          275                       280                       285
Arg Pro Val Ser Glu Val Ser Thr Leu Gln Pro Leu Pro Pro Gly Pro
      290                       295                       300
Arg Ala Pro Ala Pro Gln Pro Leu Pro Pro Ser Ser Arg Leu Gln Asp
305                       310                       315                       320
Ser Cys Lys Gln Gly His Leu Ala Cys Gly Asp Leu Cys Val Pro Pro
              325                       330                       335
Glu Gln Leu Cys Asp Phe Glu Glu Gln Cys Ala Gly Gly Glu Asp Glu
              340                       345                       350
Gln Ala Cys Gly Thr Thr Asp Phe Glu Ser Pro Glu Ala Gly Gly Trp
          355                       360                       365
Glu Asp Ala Ser Val Gly Arg Leu Gln Trp Arg Arg Val Ser Ala Gln
      370                       375                       380
Glu Ser Gln Gly Ser Ser Ala Ala Ala Ala Gly His Phe Leu Ser Leu
385                       390                       395                       400
Gln Arg Ala Trp Gly Gln Leu Gly Ala Glu Ala Arg Val Leu Thr Pro
                  405                       410                       415
Leu Leu Gly Pro Ser Gly Pro Ser Cys Glu Leu His Leu Ala Tyr Tyr
              420                       425                       430
Leu Gln Ser Gln Pro Arg Ala Gly Phe Val Gly Leu Val Asp Leu Asp
              435                       440                       445
Gly Pro Asp Gln Gln Xaa Ser Trp Gly Gly Gln Arg Asp Pro Glu Gly
      450                       455                       460
Leu
465
```

<210> 5089
<211> 793
<212> DNA
<213> Homo sapiens

<400> 5089
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120
gagattgcag cagccctggc cggagtgcct ggctttgagg tgtcagcagc tggattggag
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240
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300
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360
cattcctttc ctcccttccc cctggcaggt agagactcta ctctctgtcc ccagatcctc
420
tttctagcat gaatgaagga tgccaagaat gagaaaaagc aagggggtttg tccaggtggc
480
ccctgaattc tgcgcaaggg atgggcctgg gggaactcaa gggagggcct aaagcacttg
540
taactttgaa ccgtctgtct ggaggtcaga gcctgttgga aagcaggggt agaggggagc
600
cctggaagca gggcttttcc ggatgcctag gggtgggcag tgccagcccc tcctcaccac
660
tcttcccctt gcagtggagg agagagccag agtggatact attttttatt aaatatatta
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780
aaaaaaaaaa aaa
793
```

```
<210> 5090
<211> 104
<212> PRT
<213> Homo sapiens
```

```
<400> 5090
Xaa Asp His Ile Ser Asp Asp Pro His Thr Phe Asn His Gln Asn Leu
 1               5                  10                  15
Thr His Cys Ser Arg His Gly Ser Gly Pro Asn Ile Ile Leu Thr Gly
            20                  25                  30
Asp Ser Ser Pro Gly Phe Ser Lys Glu Ile Ala Ala Ala Leu Ala Gly
            35                  40                  45
Val Pro Gly Phe Glu Val Ser Ala Ala Gly Leu Glu Leu Gly Leu Gly
    50                  55                  60
Leu Glu Asp Glu Leu Arg Met Glu Pro Leu Gly Leu Glu Gly Leu Asn
65                  70                  75                  80
Met Leu Ser Asp Pro Cys Ala Leu Leu Pro Asp Pro Ala Val Glu Glu
                85                  90                  95
Ser Phe Arg Ser Asp Arg Leu Gln
                100
```

```
<210> 5091
<211> 3150
<212> DNA
<213> Homo sapiens
```

```
<400> 5091
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120
tgcatccgga ccctctcccc atcccagcct cccatgccaa ggcccgcctt gtcagtcact
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tccttttgtc atcggcttgg caaacgggag agaaaacaga gcttcatggg aaacagcggc
240
aacagttggt cccatacacc tttccccaag ttggagctag gcctggggcc ccagcccatg
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gcgccccggg agctccctac ctgctccatc tgcctggaga ggttgcgcga ccccatctcg
360
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4276

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1980

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2160

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<210> 5092

4277

<211> 632
<212> PRT
<213> Homo sapiens

<400> 5092
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            20              25              30
Ser His Thr Pro Phe Pro Lys Leu Glu Leu Gly Leu Gly Pro Gln Pro
        35              40              45
Met Ala Pro Arg Glu Leu Pro Thr Cys Ser Ile Cys Leu Glu Arg Leu
    50              55              60
Arg Asp Pro Ile Ser Leu Asp Cys Gly His Asp Phe Cys Ile Arg Cys
65              70              75              80
Phe Ser Thr His Arg Leu Pro Gly Cys Glu Pro Pro Cys Cys Pro Glu
            85              90              95
Cys Arg Lys Ile Cys Lys Gln Lys Arg Gly Leu Arg Ser Leu Gly Glu
            100             105             110
Lys Met Lys Leu Leu Pro Gln Arg Pro Leu Pro Pro Ala Leu Gln Glu
        115             120             125
Thr Cys Pro Val Arg Ala Glu Pro Leu Leu Leu Val Arg Ile Asn Ala
    130             135             140
Ser Gly Gly Leu Ile Leu Arg Met Gly Ala Ile Asn Arg Cys Leu Lys
145             150             155             160
His Pro Leu Ala Arg Asp Thr Pro Val Cys Leu Leu Ala Val Leu Gly
            165             170             175
Glu Gln His Ser Gly Lys Ser Phe Leu Leu Asn His Leu Leu Gln Gly
        ·180            185             190
Leu Pro Gly Leu Glu Ser Gly Glu Gly Gly Arg Pro Arg Gly Gly Glu
        195             200             205
Ala Ser Leu Gln Gly Cys Arg Trp Gly Ala Asn Gly Leu Ala Gly Gly
    210             215             220
Ile Trp Met Trp Ser His Pro Phe Leu Leu Gly Lys Glu Gly Lys Lys
225             230             235             240
Val Ala Val Phe Leu Val Asp Thr Gly Asp Ala Met Ser Pro Glu Leu
            245             250             255
Ser Arg Glu Thr Arg Ile Lys Leu Cys Ala Leu Thr Thr Met Leu Ser
            260             265             270
Ser Tyr Gln Ile Leu Ser Thr Ser Gln Glu Leu Lys Asp Thr Asp Leu
        275             280             285
Asp Tyr Leu Glu Met Phe Val His Val Ala Glu Val Met Gly Lys His
    290             295             300
Tyr Gly Met Val Pro Ile Gln His Leu Asp Leu Leu Val Arg Asp Ser
305             310             315             320
Ser His Pro Asn Lys Ala Gly Gln Gly His Val Gly Asn Ile Phe Gln
            325             330             335
Arg Leu Ser Gly Arg Tyr Pro Lys Val Gln Glu Leu Leu Gln Gly Lys
        340             345             350
Arg Ala Arg Cys Cys Leu Leu Pro Ala Pro Gly Arg Arg Arg Met Asn
    355             360             365
Gln Gly His Ala Ser Pro Gly Gly Asp Thr Asp Asp Asp Phe Arg His
    370             375             380
Leu Leu Gly Ala Tyr Val Ser Asp Val Leu Ser Ala Ala Pro Gln His
```

```
385                     390                     395                     400
Ala Lys Ser Arg Cys Gln Gly Tyr Trp Asn Glu Gly Arg Ala Val Ala
                405                     410                     415
Arg Gly Asp Arg Arg Leu Leu Thr Gly Gln Gln Leu Ala Gln Glu Ile
            420                     425                     430
Lys Asn Leu Ser Gly Trp Met Gly Arg Thr Gly Pro Gly Phe Thr Ser
            435                     440                     445
Pro Asp Glu Met Ala Ala Gln Leu His Asp Leu Arg Lys Val Glu Ala
        450                     455                     460
Ala Lys Arg Glu Phe Glu Glu Tyr Val Arg Gln Gln Asp Val Ala Thr
465                     470                     475                     480
Lys Arg Ile Phe Ser Ala Leu Arg Val Leu Pro Asp Thr Met Arg Asn
                485                     490                     495
Leu Leu Ser Thr Gln Lys Asp Ala Ile Leu Ala Arg His Gly Val Ala
                500                     505                     510
Leu Leu Cys Lys Gly Arg Asp Gln Thr Leu Glu Ala Leu Glu Ala Glu
                515                     520                     525
Leu Gln Ala Thr Ala Lys Ala Phe Met Asp Ser Tyr Thr Met Arg Phe
        530                     535                     540
Cys Gly His Leu Ala Ala Val Gly Gly Ala Val Gly Ala Gly Leu Met
545                     550                     555                     560
Gly Leu Ala Gly Gly Val Val Gly Ala Gly Met Ala Ala Ala Ala Leu
                565                     570                     575
Ala Ala Glu Ala Gly Met Val Ala Ala Gly Ala Ala Val Gly Ala Thr
                580                     585                     590
Gly Ala Ala Val Val Gly Gly Gly Val Gly Ala Gly Leu Ala Ala Thr
            595                     600                     605
Val Gly Cys Met Glu Lys Glu Glu Asp Glu Arg Leu Leu Glu Gly Asp
    610                     615                     620
Arg Glu Pro Leu Leu Gln Glu Glu
625                     630
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<210> 5093
<211> 1662
<212> DNA
<213> Homo sapiens
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<400> 5093
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360
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420
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480
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960
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1200
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1320
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1662

<210> 5094
<211> 365
<212> PRT
<213> Homo sapiens

<400> 5094
Met Ala Asp Gln Asp Pro Ala Gly Ile Ser Pro Leu Gln Gln Met Val
1   5   10   15
Ala Ser Gly Thr Gly Ala Val Val Thr Ser Leu Phe Met Thr Pro Leu
            20   25   30
Asp Val Val Lys Val Arg Leu Gln Ser Gln Arg Pro Ser Met Ala Ser
        35   40   45
Glu Leu Met Pro Ser Ser Arg Leu Trp Ser Leu Ser Tyr Thr Lys Leu

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                50                        55                        60
Pro Ser Leu Ser Tyr Thr Lys Trp Lys Cys Leu Leu Tyr Cys Asn Gly
65                        70                        75                        80
Val Leu Glu Pro Leu Tyr Leu Cys Pro Asn Gly Ala Arg Cys Ala Thr
                         85                        90                        95
Trp Phe Gln Asp Pro Thr Arg Phe Thr Gly Thr Met Asp Ala Phe Val
                         100                       105                       110
Lys Ile Val Arg His Glu Gly Thr Arg Thr Leu Trp Ser Gly Leu Pro
                         115                       120                       125
Ala Thr Leu Val Met Thr Val Pro Ala Thr Ala Ile Tyr Phe Thr Ala
                         130                       135                       140
Tyr Asp Gln Leu Lys Ala Phe Leu Cys Gly Arg Ala Leu Thr Ser Asp
145                       150                       155                       160
Leu Tyr Ala Pro Met Val Ala Gly Ala Leu Ala Arg Leu Gly Thr Val
                         165                       170                       175
Thr Val Ile Ser Pro Leu Glu Leu Met Arg Thr Lys Leu Gln Ala Gln
                         180                       185                       190
His Val Ser Tyr Arg Glu Leu Gly Ala Cys Val Arg Thr Ala Val Ala
                         195                       200                       205
Gln Gly Gly Trp Arg Ser Leu Trp Leu Gly Trp Gly Pro Thr Ala Leu
                         210                       215                       220
Arg Asp Val Pro Phe Ser Val His Pro Pro Pro Gln Ala Leu Tyr Trp
225                       230                       235                       240
Phe Asn Tyr Glu Leu Val Lys Ser Trp Leu Asn Gly Leu Arg Pro Lys
                         245                       250                       255
Asp Gln Thr Ser Val Gly Met Ser Phe Val Ala Gly Gly Ile Ser Gly
                         260                       265                       270
Thr Val Ala Ala Val Leu Thr Leu Pro Phe Asp Val Val Lys Thr Gln
                         275                       280                       285
Arg Gln Val Ala Leu Gly Ala Met Glu Ala Val Arg Val Asn Pro Leu
                         290                       295                       300
His Val Asp Ser Thr Trp Leu Leu Leu Arg Arg Ile Arg Ala Glu Ser
305                       310                       315                       320
Gly Thr Lys Gly Leu Phe Ala Gly Phe Leu Pro Arg Ile Ile Lys Ala
                         325                       330                       335
Ala Pro Ser Cys Ala Ile Met Ile Ser Thr Tyr Glu Phe Gly Lys Ser
                         340                       345                       350
Phe Phe Gln Arg Leu Asn Gln Asp Arg Leu Leu Gly Gly
                         355                       360                       365
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<210> 5095
<211> 2230
<212> DNA
<213> Homo sapiens

<400> 5095
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120
tttcttgacg tctctaggaa ccttcaggcc acggatcagc agaacataca cgaacaaggg
180
aaaaaaattc ctcttaattt tactgatggc ccccgtctc tcaggtggtc tgagagtggc
240
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acttggtaaa cagtgtgtgt ttaatccagc ctctgcctct gactaccttt aagaccagga
300
ctcgaagcag agtgagaggc ctccctccac ccacctcggg gcgagtgaag acacagctta
360
cagaggcgtt caaagtagtg acgcagtgag gtctgaatga acacggagga ttttattact
420
caccattaat ggtagtgaaa tgcccttcgg tggataccat caggtgaggt agggaagaca
480
ttccagagga aatctgttaa tggggcaacg tttttatttc tgtacattta catacaaatt
540
ttccccaaag gtacaacaga tgcgacacca tgcagacacg cagctgtgaa cgacagttca
600
gaactcagcg taagcttgtg ctatgaacga gcaccgtcag agaattccca cccacacgta
660
cagaaacaca gtttttatat tacaacctca aggacagagg gagggaagtg ttcgccgcta
720
gacatgacac accatactgc ttttccaaaa cacacgggac atgaaagcga ggtggtgcct
780
tctagacgag aggacagctg tagtgtgggc ctcccccgca catgcgatac ctcgggccgg
840
gcggtgtgac gtcacaggcc cacttacggc acttgcagtt tgggattgct catttggctc
900
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960
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1020
agtaaacaaa aacatgtaac cttttttcctg tttctcttgg gtggtaataa ttttagggca
1080
tttgataaga gtttgacttc agaaaaagaa caaagtgaag aaatgttcag ctccatctca
1140
ggtgttcaca tttgtgcata actttattg aaaggctgac agggtaggct agcggaacgg
1200
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1260
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1320
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1380
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1440
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1620
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1680
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1740
gcagtgtctt cgttggacca gtttttttatt gtcatttgag gtggagatca gagatcatga
1800
ccagaagagt gtgagtgctg tcccttgcca ccaacttcct agagatttcg ggcagcactc
1860
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tacagcttca atttccaaaa aaaaaaaagt ttacacgacc agtgagactg ctcgcaactt
1920
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1980
tgctgagggt gatgggtgca gacgtacacc tgtccaggtg caggctcagg ggcctcgctg
2040
gatccttccc accttcccca actgcctact ggcctggcta ctggataggt cctattctgt
2100
acataatggg ggtttgttga caggtggctt tatagcaagt actccaaaaa aggtaaaagg
2160
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2220
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2230

<210> 5096
<211> 153
<212> PRT
<213> Homo sapiens

<400> 5096
Met Ala Leu Ser Arg Arg Gly Gly Pro Thr Ala Leu Leu Pro Gly Gln
 1   5   10   15
Pro Glu Glu Glu Glu Ala Gly Cys Leu Phe Gly Gly Ser Phe Ser Leu
                20   25   30
Gly Ile Pro Glu Ala Val Glu Gln His Leu Tyr Glu Met Leu Pro Glu
            35   40   45
Gln Gln His Phe Pro Val Gly Thr Ala Pro Gly Asn Pro Val Pro Ser
        50   55   60
Glu Gln Gly Gly Arg Thr His Pro Ser Leu Ile Arg Ile Trp Ala Arg
65   70   75   80
Arg Ala Gln Gln Gly Arg Leu Leu Arg Leu Pro Thr Ser Gln His Arg
                85   90   95
Leu Ser Gly Leu Asn Pro Ser Val Leu Phe Pro Ser Trp Leu Ile Gly
            100   105   110
Arg Pro Phe Ala Gly Thr His Cys Phe Asn Leu Thr Leu Pro Pro Pro
        115   120   125
Ala Thr Leu Leu His Thr Pro Leu Arg Ser Ala Ser Leu Pro Cys Gln
        130   135   140
Pro Phe Asn Lys Ser Tyr Ala Gln Met
145   150

<210> 5097
<211> 3074
<212> DNA
<213> Homo sapiens

<400> 5097
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120
ggctcagcac gaggctaaag tcagaagtga gtgaaaacaa aatagcatgt tgatttaagt
180

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gaaataacag aacaggaggc ctttggttat aacaattgtg gaggtggtct gtgaatgcag
240
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480
tggtcttgag gacgcagagg ttacaacaca ggctgggctg cagggcccaa gtaggacttg
540
aggtcataac cagaggactg aagggacacc tgtcctggca ccatactgga gaagtgcttg
600
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660
cccctgcacc ctgttcccag catataccag gctctcaccc catgcctgct gactcaacac
720
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960
cctcaacatt ttcaaaaagc actttttttt ttggagacag agtctcgctg tgtctcccag
1020
gctggagtgc agcggggtga tctcagctca ctgcaacctc tgcctcctgg gttcaagcaa
1080
ttctcctgcc tcagcctccc gagtagctgg gattacaggt gcgtgccacc acacccagct
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1320
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1680
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1800
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1920
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1980
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2100
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2160
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2220
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2280
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2520
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3074

<210> 5098
<211> 114
<212> PRT
<213> Homo sapiens

<400> 5098
Met Ala Val Pro Gln Leu Gly Pro Ile Pro Val His Val Arg Thr Lys
1   5   10   15
Gly Val Phe Ala Ile Met Leu Pro Thr Lys Ser Lys Glu Cys Trp Phe

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               20                    25                    30
Pro Ser Phe Gln Pro Gln His Phe Gln Lys Ala Leu Phe Phe Leu Glu
           35                    40                    45
Thr Glu Ser Arg Cys Val Ser Gln Ala Gly Val Gln Arg Gly Asp Leu
       50                    55                    60
Ser Ser Leu Gln Pro Leu Pro Pro Gly Phe Lys Gln Phe Ser Cys Leu
65                    70                    75                    80
Ser Leu Pro Ser Ser Trp Asp Tyr Arg Cys Val Pro Pro His Pro Ala
               85                    90                    95
Asn Phe Cys Ile Phe Ser Arg Asn Gly Val Ser Pro His Trp Pro Gly
               100                   105                   110
Trp Ser
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<210> 5099
<211> 801
<212> DNA
<213> Homo sapiens

<400> 5099

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180
gctcggctac ctggtactga gtgaaggtgc agtgctggcg ggcagcaagt gtgaagacag
240
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360
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420
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480
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540
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600
gctcgcccac ctcccacccc tacctggacg ggcccaggct tggggactct gagctgtgtt
660
aaggagaaca agggcaagga gacctccctt tgtgctccct cactccctaa taaacatgag
720
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780
aaaaaaaaaa aaaaaaaaaa a
801
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<210> 5100
<211> 102
<212> PRT
<213> Homo sapiens

<400> 5100
Ala Cys Arg Arg Ala Arg Val Gly Glu Ala Asp Trp Val Leu Gly Leu
 1   5   10   15
Cys Asp Glu Ala Gly Thr Pro Val Gly Leu Gly Leu Leu Leu Glu Leu
                20   25   30
Gly Pro Ser Ala Arg Pro Pro Pro Thr Pro Thr Trp Thr Gly Pro Gly
            35   40   45
Leu Gly Thr Leu Ser Cys Val Lys Glu Asn Lys Gly Lys Glu Thr Ser
        50   55   60
Leu Cys Ala Pro Ser Leu Pro Asn Lys His Glu Ser Asp Val Leu Gln
65   70   75   80
Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
                85   90   95
Lys Lys Lys Lys Lys Lys
                100

<210> 5101
<211> 1711
<212> DNA
<213> Homo sapiens

<400> 5101
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120
agcgtccctg agacgccaac ggcagtcact gcccccatt ccagctcctg ggatacgtac
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360
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420
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960

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1020
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1080
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1260
aatctaaaca acgcggagca gctgtgcaga taccagggtc ctgtactgct gatccggaga
1320
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1380
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1560
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1711

<210> 5102
<211> 436
<212> PRT
<213> Homo sapiens

<400> 5102
Met Ala Lys Leu Leu Ser Cys Val Leu Gly Pro Arg Leu Tyr Lys Ile
1   5   10   15
Tyr Arg Glu Arg Asp Ser Glu Arg Ala Pro Ala Ser Val Pro Glu Thr
            20   25   30
Pro Thr Ala Val Thr Ala Pro His Ser Ser Ser Trp Asp Thr Tyr Tyr
        35   40   45
Gln Pro Arg Ala Leu Glu Lys His Ala Asp Ser Ile Leu Ala Leu Ala
    50   55   60
Ser Val Phe Trp Ser Ile Ser Tyr Tyr Ser Ser Pro Phe Ala Phe Phe
65   70   75   80
Tyr Leu Tyr Arg Lys Gly Tyr Leu Ser Leu Ser Lys Val Val Pro Phe
                85   90   95
Ser His Tyr Ala Gly Thr Leu Leu Leu Leu Leu Ala Gly Val Ala Cys
            100   105   110
Leu Arg Gly Ile Gly Arg Trp Thr Asn Pro Gln Tyr Arg Gln Phe Ile
        115   120   125
Thr Ile Leu Glu Ala Thr His Arg Asn Gln Ser Ser Glu Asn Lys Arg
    130   135   140
Gln Leu Ala Asn Tyr Asn Phe Asp Phe Arg Ser Trp Pro Val Asp Phe
145   150   155   160
His Trp Glu Glu Pro Ser Ser Arg Lys Glu Ser Arg Gly Gly Pro Ser

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                  165                    170                    175
Arg Arg Gly Val Ala Leu Leu Arg Pro Glu Pro Leu His Arg Gly Thr
            180                    185                    190
Ala Asp Thr Leu Leu Asn Arg Val Lys Lys Leu Pro Cys Gln Ile Thr
            195                    200                    205
Ser Tyr Leu Val Ala His Thr Leu Gly Arg Arg Met Leu Tyr Pro Gly
            210                    215                    220
Ser Val Tyr Leu Leu Gln Lys Ala Leu Met Pro Ala Leu Leu Gln Gly
225                    230                    235                    240
Gln Ala Arg Leu Val Glu Glu Cys Asn Gly Arg Arg Ala Lys Leu Leu
                  245                    250                    255
Ala Cys Asp Gly Asn Glu Ile Asp Thr Met Phe Val Asp Arg Arg Gly
            260                    265                    270
Thr Ala Glu Pro Gln Gly Gln Lys Leu Val Ile Cys Cys Glu Gly Asn
            275                    280                    285
Ala Gly Phe Tyr Glu Val Gly Cys Val Ser Thr Pro Leu Glu Ala Gly
            290                    295                    300
Tyr Ser Val Leu Gly Trp Asn His Pro Gly Phe Ala Gly Ser Thr Gly
305                    310                    315                    320
Val Pro Phe Pro Gln Asn Glu Ala Asn Ala Met Asp Val Val Val Gln
                  325                    330                    335
Phe Ala Ile His Arg Leu Gly Phe Gln Pro Gln Asp Ile Val Ile Tyr
            340                    345                    350
Ala Trp Ser Ile Gly Gly Phe Thr Ala Thr Trp Ala Ala Met Ser Tyr
            355                    360                    365
Pro Asp Val Ser Ala Met Ile Leu Asp Ala Ser Phe Asp Asp Leu Val
            370                    375                    380
Pro Leu Ala Leu Lys Val Met Pro Asp Ser Trp Arg Gly Leu Val Thr
385                    390                    395                    400
Arg Thr Val Arg Gln His Leu Asn Leu Asn Asn Ala Glu Gln Leu Cys
                  405                    410                    415
Arg Tyr Gln Gly Pro Val Leu Leu Ile Arg Arg Thr Lys Asp Glu Ile
            420                    425                    430
Ile Thr Thr Thr
            435
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<210> 5103
<211> 1982
<212> DNA
<213> Homo sapiens

<400> 5103
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120
aatttaggcc aatacataac tagatttgaa taaagtcaga tgaagcaata attcctcctc
180
tgtgtttgaa aggaatgagt gtggttacaa agtcacagga tgagtccctg ggatctgggg
240
tgggagaagg ggtggatcaa gaatgacttg ggtttgtcac tccctagcag gctgagggcg
300
tgacacagca gctcggtggc ggagaggtct attctagttt ctaacactcc aatgctaact
360
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gaaaactggg gagggggaac agggagacag aatcttcatc ttcttccttt tgtgaactgg
540
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600
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720
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900
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960
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1080
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1140
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1200
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1320
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1440
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1740
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1800
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1860
tcaggtggtg ctggcggatc gggggctctg tcccatagcg cgaggcgcgg aggcgaagca
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1980
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4290

gg
1982

<210> 5104
<211> 167
<212> PRT
<213> Homo sapiens

<400> 5104
Met Phe Ile Leu Lys His Thr Ser Lys Gln Asp Lys Gln Gln Tyr Val
1   5   10   15
Ser Leu Leu His Cys Arg Ser Ser Leu Asn Leu Pro Arg His Pro Pro
            20   25   30
Leu His Leu Phe Pro Gln Glu Leu Leu Gly His Phe Phe Cys Leu Trp
        35   40   45
Pro Ala Ala Ser Leu Lys Thr Thr Lys Asp Leu Met Ser Lys Ser Leu
    50   55   60
Ser Gly Val Cys Pro Ala Ser Ser Gly Leu Leu Arg Thr Pro His Pro
65   70   75   80
Glu Gly Ala Arg Arg Pro Ala Gly Leu Ala Gly Pro Gly Ser Ser Leu
                85   90   95
Thr Ala Gly Trp Thr Ala Phe Arg Thr Cys Pro Gly Cys Ser Ala Phe
            100   105   110
Val Ala Gly Ser Asn Trp Arg Asn Leu Glu Arg Gly Ser Cys Ala Cys
        115   120   125
Lys Asp Gly Phe Cys Val Ser Ser Gly Phe Leu Leu Ser Gly Pro Gly
        130   135   140
Ser Ser Leu Val Pro Tyr Arg Pro Leu Phe Val His Gly Leu Ala Leu
145   150   155   160
Tyr Glu Arg Ala Met Cys Phe
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<210> 5105
<211> 1359
<212> DNA
<213> Homo sapiens

<400> 5105
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120
tccagttccc cccacaccca gcaaagtgga caagaccccc cagaggtggt tctctctgtt
180
ctggcttgtt gcaggttcgg agggcagccc tgagtgtctg ccatccgctc aactcagtgt
240
tttccttttc ccgcagacct cgcgacctgt gtcagcagag ccgccctgca ccaccatgtg
300
catcatcttc tttaagtttg atcctcgccc tgtttccaaa aacgcgtaca ggctcatctt
360
ggcagccaac agggatgaat tctacagccg accctccaag ttagctgact tctgggggaa
420
caacaacgag atcctcagtg ggctggacat ggaggaaggc aaggaaggag gcacatggct
480

gggcatcagc acacgtggca agctggcagc actcaccaac tacctgcagc cgcagctgga
540
ctggcaggcc cgagggcgag cacagcaaag ggagacgtca tttgctacta tgggaaccga
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660
gagactccct ggaggaagct gtgctttggg aagcagctct tcctggaggc tgtggaacgg
720
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780
gaggcgcagc tgccagaccc ggccatcgag gaccagggtg gggagtacgt gcagcccatg
840
ctgagcaagt acgcggctgt gtgcgtgcgc tgccctggct acggcaccag aaccaacact
900
atcatcctgg tagatgcgga cggccacgtg accttcactg agcgtagcat gatggacaag
960
gacctctccc actgggagac cagaacctat gagttcacac tgcagagcta accccacctc
1020
tgggcctggc cagtgggctc ctggggggcc ctgccttgag gggcactgtg gacaggaaac
1080
cttcctttgc catactgcat tgcactgccc gtggcttggc cagcatcccc cggatcaggg
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1200
gccagtgagg agcagcagag tctgatacta ggtctaggac cggccgaggt ataccatgaa
1260
catgtggata gacctgagcc cactcttgca catgtacaca ggcactcaca tggcacacac
1320
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1359

<210> 5106
<211> 178
<212> PRT
<213> Homo sapiens

<400> 5106
Met Ala Gly His Gln His Thr Trp Gln Ala Gly Ser Thr His Gln Leu
1   5   10   15
Pro Ala Ala Ala Gly Leu Ala Gly Pro Arg Ala Ser Thr Ala Lys
            20   25   30
Gly Asp Val Ile Cys Tyr Tyr Gly Asn Arg Gly Glu Pro Asp Pro Ile
            35   40   45
Val Leu Thr Pro Gly Thr Tyr Gly Leu Ser Asn Ala Leu Leu Glu Thr
        50   55   60
Pro Trp Arg Lys Leu Cys Phe Gly Lys Gln Leu Phe Leu Glu Ala Val
65   70   75   80
Glu Arg Ser Gln Ala Leu Pro Lys Asp Val Leu Ile Ala Ser Leu Leu
                85   90   95
Asp Val Leu Asn Asn Glu Glu Ala Gln Leu Pro Asp Pro Ala Ile Glu
                100   105   110
Asp Gln Gly Gly Glu Tyr Val Gln Pro Met Leu Ser Lys Tyr Ala Ala
            115   120   125
Val Cys Val Arg Cys Pro Gly Tyr Gly Thr Arg Thr Asn Thr Ile Ile

```
      130                    135                    140
Leu Val Asp Ala Asp Gly His Val Thr Phe Thr Glu Arg Ser Met Met
145                    150                    155                    160
Asp Lys Asp Leu Ser His Trp Glu Thr Arg Thr Tyr Glu Phe Thr Leu
                   165                    170                    175
Gln Ser
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<210> 5107
<211> 1207
<212> DNA
<213> Homo sapiens

<400> 5107
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agtcctgcag cccgcaggct ctgctgtgcc tctttggcgt attcctcttg ctcactcccc
120
acagggatga ccaccacctg gaacggggac agccacagtg gccatttccc cccgcagctt
180
tctgccagca ctcccaacag tctttccaca gaaccgagca ctgctcggtg aatgaggact
240
ggacgctcca gggcacccgc cccagtttgt atttatttat ttatttattt atttagagac
300
agagtctcgc tctgtcgcnc taggggggtg cagtggcgca atctcagctc actgcaacct
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420
cgtgtgccac catgcccggc taattttttt attttttagta gagacagggt ttcaccgtgt
480
tagccagggt ggtcttgatc tcctgacctc atgatccgtc cgcctcagcc tcccagagtg
540
ctgggattac aggcatgagc cactgcgcct ggcccaattt atttttttt gtagtttcat
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660
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720
gtcagctggg ttggggtctc ccatgtgagg gaggctgatg cactcgcag gtttttgcct
780
catctatgta caaaggctca gaaaatttct tcggcatttg ggaccctcgt gttctgtagc
840
tccaccagtc gctgcacagc ctcaggcaag tcccactccc caaggcgacg attatctcga
900
gtccgaatgt tcactgttct cttactttgc tctttctggc caaccacaaa ctgaaaattg
960
tagtgggcaa gctgggcccg gcggattctc cggctgaggg tcagtccaga gtctgcatcc
1020
aggtcactga ccagtcctgc agcccgcagg ctctgctgtg cctctttggc gtattcctct
1080
tgctcactcc ccacagggat gaccaccacc tggaacgggg acagccacag tggccccctta
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tactggaggt caaatctcag gggcggttgg aagtcaagct gaattgtccc acactgatgt
1200
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ggccggc
1207

<210> 5108
<211> 83
<212> PRT
<213> Homo sapiens

<400> 5108
Met Arg Thr Gly Arg Ser Arg Ala Pro Ala Pro Val Cys Ile Tyr Leu
1   5   10   15
Phe Ile Tyr Leu Phe Arg Asp Arg Val Ser Leu Cys Arg Xaa Arg Gly
            20   25   30
Val Gln Trp Arg Asn Leu Ser Ser Leu Gln Pro Pro Pro Pro Gly Phe
        35   40   45
Lys Arg Phe Ser Cys Leu Ser Leu Leu Ser Ser Trp Asp Tyr Arg Arg
    50   55   60
Val Pro Pro Cys Pro Ala Asn Phe Cys Ile Phe Ser Arg Asp Arg Val
65   70   75   80
Ser Pro Cys

<210> 5109
<211> 651
<212> DNA
<213> Homo sapiens

<400> 5109
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ctgcagnatg cgcagtggac ttttgaatca gctgtgcaag agaatatcag cattaatggg
120
caagcatggc aggaagcttc agataattgt tttatggatt ctgacatcaa agtacttgaa
180
gatcagtttg atgaaatcat agtagatata gccacaaaac gtaagcagta tcccagaaag
240
atcctggaat gtgtcatcaa aaccataaaa gcaaacaag aaattctgaa gcagtaccac
300
cctgttgtac atccactgga cctaaaatat gaccctgatc cagttctcaa cgggaatgct
360
ttcaactttt ccccattcaa catgatgttg gctgtggatt tgtcatatat ggtttttatt
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651

<210> 5110
<211> 206
<212> PRT

<213> Homo sapiens

<400> 5110

Leu	Leu	Glu	Lys	Ile	Arg	Glu	Pro	Ala	Leu	Gln	Xaa	Ala	Gln	Trp	Thr
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Phe	Glu	Ser	Ala	Val	Gln	Glu	Asn	Ile	Ser	Ile	Asn	Gly	Gln	Ala	Trp
		20					25					30			
Gln	Glu	Ala	Ser	Asp	Asn	Cys	Phe	Met	Asp	Ser	Asp	Ile	Lys	Val	Leu
		35					40					45			
Glu	Asp	Gln	Phe	Asp	Glu	Ile	Ile	Val	Asp	Ile	Ala	Thr	Lys	Arg	Lys
		50				55					60				
Gln	Tyr	Pro	Arg	Lys	Ile	Leu	Glu	Cys	Val	Ile	Lys	Thr	Ile	Lys	Ala
65				70					75						80
Lys	Gln	Glu	Ile	Leu	Lys	Gln	Tyr	His	Pro	Val	Val	His	Pro	Leu	Asp
				85				90						95	
Leu	Lys	Tyr	Asp	Pro	Asp	Pro	Val	Leu	Asn	Gly	Asn	Ala	Phe	Asn	Phe
			100				105					110			
Ser	Pro	Phe	Asn	Met	Met	Leu	Ala	Val	Asp	Leu	Ser	Tyr	Met	Val	Phe
		115				120					125				
Ile	Thr	Ser	Ala	Pro	His	Met	Glu	Asn	Leu	Lys	Cys	Arg	Gly	Glu	Thr
	130				135					140					
Val	Ala	Lys	Glu	Ile	Ser	Glu	Ala	Met	Lys	Ser	Leu	Pro	Ala	Leu	Ile
145				150					155						160
Glu	Gln	Gly	Glu	Gly	Phe	Ser	Gln	Val	Leu	Arg	Met	Gln	Pro	Val	Ile
				165					170					175	
His	Leu	Gln	Arg	Ile	His	Gln	Glu	Val	Phe	Ser	Ser	Cys	His	Arg	Lys
			180					185					190		
Pro	Asp	Ala	Lys	Pro	Glu	Asn	Phe	Ile	Thr	Gln	Ile	Glu	Thr		
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<210> 5111
<211> 2247
<212> DNA
<213> Homo sapiens

<400> 5111
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120
tggtgcgcag gcgcgggccg ccgcggcccg gctctcttgc gcaagcgcgc tgtccgcttc
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300
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420
tgggtgacaa ccgcgcgccc cacctttccc cacgtggccg cgaagaccgg ctcaggagca
480
tctatcggct gcacgccaac atcaacacag gcgaagatgg tctccaagcg cattgcccag
540
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660
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720
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840
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1980
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2040
tccccttcac aatgagaagt gttttctggc aggccctagg taaagggtcg ggggaggggg
2100
gagccttgta gggaggcctc tacacagaag aaagcagccc ccatgtccca gccacttctg
2160
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2220
cagagggggc aaagggcacg tcccatc
2247

<210> 5112
<211> 581
<212> PRT
<213> Homo sapiens

<400> 5112
Ala Lys His Phe Pro Ala Gly Gly Gly Asp His Arg Glu Arg Pro Gly
1   5   10   15
Arg Gly Gly Lys Asp Ala Ser Val Ala His Glu Val Ala Ser Leu Ala
            20   25   30
Leu Pro Trp Phe Ala Val Val Leu Gly Tyr Arg Glu Arg Pro Arg Val
        35   40   45
Ser Gly Arg Pro Ser Leu Gly Ala Pro Gln Arg Leu Arg Ala Tyr Gly
    50   55   60
Gly Arg Lys Gly Leu Glu Ala Ala Pro Trp Val Thr Thr Ala Arg Pro
65   70   75   80
Thr Phe Pro His Val Ala Ala Lys Thr Gly Ser Gly Ala Ser Ile Gly
                85   90   95
Cys Thr Pro Thr Ser Thr Gln Ala Lys Met Val Ser Lys Arg Ile Ala
                100   105   110
Gln Glu Thr Phe Asp Ala Ala Val Arg Glu Asn Ile Glu Glu Phe Ala
        115   120   125
Met Gly Pro Glu Glu Ala Val Lys Glu Ala Val Glu Gln Phe Glu Ser
    130   135   140
Gln Gly Val Asp Leu Ser Asn Ile Val Lys Thr Ala Pro Lys Val Ser
145   150   155   160
Ala Asp Gly Ser Gln Glu Pro Thr His Asp Ile Leu Gln Met Leu Ser
                165   170   175
Asp Leu Gln Glu Ser Val Ala Ser Ser Arg Pro Gln Glu Val Ser Ala
                180   185   190
Tyr Leu Thr Arg Phe Cys Asp Gln Cys Lys Gln Asp Lys Ala Cys Arg
        195   200   205
Phe Leu Ala Ala Gln Lys Gly Ala Tyr Pro Ile Ile Phe Thr Ala Arg
    210   215   220
Lys Leu Ala Thr Ala Gly Asp Gln Gly Leu Leu Leu Gln Ser Leu Asn
225   230   235   240
Ala Leu Ser Val Leu Thr Asp Gly Gln Pro Asp Leu Leu Asp Ala Gln
                245   250   255
Gly Leu Gln Leu Leu Val Ala Thr Leu Thr Gln Asn Ala Asp Glu Ala
                260   265   270
Asp Leu Thr Cys Ser Gly Ile Arg Cys Val Arg His Ala Cys Leu Lys
        275   280   285
His Glu Gln Asn Arg Gln Asp Leu Val Lys Ala Gly Val Leu Pro Leu
        290   295   300
Leu Thr Gly Ala Ile Thr His His Gly His His Thr Asp Val Val Arg
305   310   315   320
Glu Ala Cys Trp Ala Leu Arg Val Met Thr Phe Asp Asp Ile Arg
                325   330   335
Val Pro Phe Gly His Ala His Asn His Ala Lys Met Ile Val Gln Glu

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                340                      345                      350
Asn Lys Gly Leu Lys Val Leu Ile Glu Ala Thr Lys Ala Phe Leu Asp
            355                      360                      365
Asn Pro Gly Ile Leu Ser Glu Leu Cys Gly Thr Leu Ser Arg Leu Ala
        370                      375                      380
Ile Arg Asn Glu Phe Cys Gln Glu Val Val Asp Leu Gly Gly Leu Ser
385                      390                      395                      400
Ile Leu Val Ser Leu Leu Ala Asp Cys Asn Asp His Gln Met Arg Asp
                405                      410                      415
Gln Ser Gly Val Gln Glu Leu Val Lys Gln Val Leu Ser Thr Leu Arg
            420                      425                      430
Ala Ile Ala Gly Asn Asp Asp Val Lys Asp Ala Ile Val Arg Ala Gly
        435                      440                      445
Gly Thr Glu Ser Ile Val Ala Ala Met Thr Gln His Leu Thr Ser Pro
    450                      455                      460
Gln Val Trp Glu Gln Ser Cys Ala Ala Leu Cys Phe Leu Ala Leu Arg
465                      470                      475                      480
Lys Pro Asp Asn Ser Arg Ile Ile Val Glu Gly Gly Gly Ala Val Ala
                485                      490                      495
Ala Leu Gln Ala Met Lys Ala His Pro Gln Lys Ala Gly Val Gln Lys
            500                      505                      510
Gln Ala Cys Met Leu Ile Arg Asn Leu Val Ala His Gly Gln Ala Phe
        515                      520                      525
Ser Lys Pro Ile Leu Asp Leu Gly Ala Glu Ala Leu Ile Met Gln Ala
    530                      535                      540
Arg Ser Ala His Arg Asp Cys Glu Asp Val Ala Lys Ala Ala Leu Arg
545                      550                      555                      560
Asp Leu Gly Cys His Val Glu Leu Arg Glu Leu Trp Thr Gly Gln Arg
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Gly Asn Leu Ala Pro
            580
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<210> 5113
<211> 472
<212> DNA
<213> Homo sapiens
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<400> 5113
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120
attggcacgc agcgcggagc ctggcacctg cagtgtagac acactggcca ccgctcagtg
180
caagagggcc cctttgctaa tgtgcacagc tctttatgcc tttttttccta tgccttttttg
240
gattggagca agagattttt ttttccaagt aaagaacaat ttatgttcct aaatactttt
300
tttccttgac atgatgaagt tgagcaaggt ggctatagaa cttttttttct taattttatt
360
gcccaagtaa tgttctttac aaagtaggga aatacagata cataaaaaga agactgccaa
420
tcccccgtaa tcccaccagt cgcatcccta cccgctctta ggagattccg ga
472
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<210> 5114
<211> 100
<212> PRT
<213> Homo sapiens

<400> 5114
Met Val Gln Pro Leu Leu His Val Pro Pro Val Gly Leu Cys Asp Leu
 1   5   10   15
Ser Pro Gly Thr Leu Thr Arg Cys Leu Phe Cys Ser Pro Leu Asn Ser
             20   25   30
Met His Leu Thr Pro Val Ile Gly Thr Gln Arg Gly Ala Trp His Leu
         35   40   45
Gln Cys Arg His Thr Gly His Arg Ser Val Gln Glu Gly Pro Phe Ala
     50   55   60
Asn Val His Ser Ser Leu Cys Leu Phe Ser Tyr Ala Phe Leu Asp Trp
65   70   75   80
Ser Lys Arg Phe Phe Phe Pro Ser Lys Glu Gln Phe Met Phe Leu Asn
                 85   90   95
Thr Phe Phe Pro
                100

<210> 5115
<211> 1003
<212> DNA
<213> Homo sapiens

<400> 5115
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ttttatttac aaaatatata ctgaatacta tacatctggc cccatcacca tggaaacaac
120
tccaaagcct gcctggggat ttgtgcccaa gcccagccca ggagggctag agaaagcaaa
180
ggtgtctacc agccgccgcc atcccagaag gaaagcctct tcccatgagt gcctgtgggt
240
gggcggtgag ctcaacaccc acaaagggca gaaggcctgg gggcagtgag gtgatggtga
300
gggcatggga agcagatgct gctgagggtg ggtggaggga gaaatggaga cccagcaccc
360
agcagggggа gccaggtgac agcaggggaa gcagatggca gggccccagg cagtccagga
420
ccccaggctc tgaagggtgg ggcaaggggg tcaggtcacg tcttgacatc cagcagtggc
480
tccgcttgtg ctggtagccc actctgccca gccatgtccc accttggggt ctcccatgtc
540
agagagcagc tcctgctcag catcatgcag ttcctcagct gggtcatagc tgtacatggg
600
gagcaggtgc atgcgcagcc ggtccacccg ctttttcttc tgtacataca ttaccacagc
660
caccaccacc ccgaccaggg tgatgaggaa gaagggcccc aacacatagc ccaccatgga
720
gtcgctgttg gcctgggggg cattgggcac agtggtgtta ctcatgacat cagcagccgg
780

```
agggctgggt ggtcagcatg ggcagtggcg cttcgggagg gcgcctccac tgggctcccc
840
agtcgtatgc tcatcgtccc aggtcaaggg ggcatgccag ggtggggagg gcgtcaggcc
900
gctgctagga tgcgggccag caacagcgga ncaggaggtg gttcccacgg cgctgggnag
960
gctcacgccg gaggtggggg tgttggggga tgctgatggg tcg
1003
```

```
<210> 5116
<211> 226
<212> PRT
<213> Homo sapiens
```

```
<400> 5116
Met Leu Leu Arg Val Gly Gly Gly Arg Asn Gly Asp Pro Ala Pro Ser
  1               5                  10                  15
Arg Gly Ser Gln Val Thr Ala Gly Glu Ala Asp Gly Arg Ala Pro Gly
              20                  25                  30
Ser Pro Gly Pro Gln Ala Leu Lys Gly Gly Ala Arg Gly Ser Gly His
              35                  40                  45
Val Leu Thr Ser Ser Ser Gly Ser Ala Cys Ala Gly Ser Pro Leu Cys
          50                  55                  60
Pro Ala Met Ser His Leu Gly Val Ser His Val Arg Glu Gln Leu Leu
 65                  70                  75                  80
Leu Ser Ile Met Gln Phe Leu Ser Trp Val Ile Ala Val His Gly Glu
                  85                  90                  95
Gln Val His Ala Gln Pro Val His Pro Leu Phe Leu Leu Tyr Ile His
              100                 105                 110
Tyr His Ser His His His Pro Asp Gln Gly Asp Glu Glu Glu Gly Pro
          115                 120                 125
Gln His Ile Ala His His Gly Val Ala Val Gly Leu Gly Gly Ile Gly
      130                 135                 140
His Ser Gly Val Thr His Asp Ile Ser Ser Arg Arg Ala Gly Trp Ser
145                 150                 155                 160
Ala Trp Ala Val Ala Leu Arg Glu Gly Ala Ser Thr Gly Leu Pro Ser
              165                 170                 175
Arg Met Leu Ile Val Pro Gly Gln Gly Gly Met Pro Gly Trp Gly Gly
              180                 185                 190
Arg Gln Ala Ala Ala Arg Met Arg Ala Ser Asn Ser Gly Xaa Gly Gly
          195                 200                 205
Gly Ser His Gly Ala Gly Xaa Ala His Ala Gly Gly Gly Gly Val Gly
      210                 215                 220
Gly Cys
225
```

```
<210> 5117
<211> 1180
<212> DNA
<213> Homo sapiens
```

```
<400> 5117
nngaattcaa cttgttcaag agaaggtctt gtacgtgcct aagttctaga gcctcctgac
60
```

```
gtgagcatgg ctgagagtga ggaccgctcc ctgaggatcg ttctggtagg gaaaactgga
120
agtgggaaaa gtgcaacagc gaacaccatc cttggagagg aaatctttga ttctagaatt
180
gctgcccaag ctgttaccaa gaactgtcaa aaagcatccc gggaatggca ggggagagac
240
cttcttgttg tagacactcc agggctcttt gacaccaagg agagcctgga caccacctgc
300
aaggaaatca gccgctgcat catctcctcc tgcccagggc cccatgctat tgtcctagtt
360
ctgctgctgg gccgctacac agaggaggag cagaaaaccg ttgcattgat caaggctgtc
420
tttgggaagt cagccatgaa gcacatggtc atcttgttca ctcgcaaaga gagttggag
480
ggccagagct tccatgactt catagcagat gcggatgtgg gcctaaaaag catcgtcaag
540
gagtgcggga accgctgctg tgcctttagc aacagcaaga aaaccagtaa ggcagagaag
600
gaaagtcaag tgcaggagtt ggtggagctg atagagaaaa tggtgcagtg caacgaaggg
660
gcttactttt ctgatgacat atacaaggac acagaggaaa ggctgaaaca cgggaagag
720
gttttgagga aaatctacac tgaccaatta aatgaagaaa ttaaactagt agaagaggat
780
aagcataaat cagaggaaga aaaggagaaa gaaattaaat tactaaaatt aaaatatgat
840
gaaaaaataa aaaatataag ggaagaagct gagagaaata tatttaaaga tgtttttaat
900
aggatttgga agatgctttc agaaatatgg cataggtttt tgtcgaaatg taagtttttat
960
tcttcctaat ttactgtgat ttgttaatgg atgaattgta ttttgcaaag atagttagag
1020
aaatacctcc ttcccttag ctttattaag gtatcattga taaataaaaa taaaatatgt
1080
ttaatgtata taatgtgatt tttaaatata tatatatata tatacacaca ttgtgaaata
1140
atgaaataaa ggtaattaac acatctaaaa aaaaaaaaaa
1180
```

```
<210> 5118
<211> 300
<212> PRT
<213> Homo sapiens
```

```
<400> 5118
Met Ala Glu Ser Glu Asp Arg Ser Leu Arg Ile Val Leu Val Gly Lys
1               5                   10                  15
Thr Gly Ser Gly Lys Ser Ala Thr Ala Asn Thr Ile Leu Gly Glu Glu
            20                  25                  30
Ile Phe Asp Ser Arg Ile Ala Ala Gln Ala Val Thr Lys Asn Cys Gln
            35                  40                  45
Lys Ala Ser Arg Glu Trp Gln Gly Arg Asp Leu Leu Val Val Asp Thr
        50                  55                  60
Pro Gly Leu Phe Asp Thr Lys Glu Ser Leu Asp Thr Thr Cys Lys Glu
```

```
65                    70                   75                   80
Ile Ser Arg Cys Ile Ile Ser Ser Cys Pro Gly Pro His Ala Ile Val
                85                   90                   95
Leu Val Leu Leu Leu Gly Arg Tyr Thr Glu Glu Glu Gln Lys Thr Val
            100                  105                  110
Ala Leu Ile Lys Ala Val Phe Gly Lys Ser Ala Met Lys His Met Val
            115                  120                  125
Ile Leu Phe Thr Arg Lys Glu Glu Leu Glu Gly Gln Ser Phe His Asp
        130                  135                  140
Phe Ile Ala Asp Ala Asp Val Gly Leu Lys Ser Ile Val Lys Glu Cys
145                  150                  155                  160
Gly Asn Arg Cys Cys Ala Phe Ser Asn Ser Lys Lys Thr Ser Lys Ala
                165                  170                  175
Glu Lys Glu Ser Gln Val Gln Glu Leu Val Glu Leu Ile Glu Lys Met
            180                  185                  190
Val Gln Cys Asn Glu Gly Ala Tyr Phe Ser Asp Asp Ile Tyr Lys Asp
        195                  200                  205
Thr Glu Glu Arg Leu Lys Gln Arg Glu Glu Val Leu Arg Lys Ile Tyr
        210                  215                  220
Thr Asp Gln Leu Asn Glu Glu Ile Lys Leu Val Glu Glu Asp Lys His
225                  230                  235                  240
Lys Ser Glu Glu Glu Lys Glu Lys Glu Ile Lys Leu Leu Lys Leu Lys
                245                  250                  255
Tyr Asp Glu Lys Ile Lys Asn Ile Arg Glu Glu Ala Glu Arg Asn Ile
            260                  265                  270
Phe Lys Asp Val Phe Asn Arg Ile Trp Lys Met Leu Ser Glu Ile Trp
        275                  280                  285
His Arg Phe Leu Ser Lys Cys Lys Phe Tyr Ser Ser
    290                  295                  300
```

```
<210> 5119
<211> 1450
<212> DNA
<213> Homo sapiens

<400> 5119
nnaatgatga atatcaaaga ttaaagcact tcactaaatc ttgtattttt tcccaaaata
60
cagctggtga aaatcttatc cttgagtaga aaggaatcaa acaagtcata taccacccgt
120
cttcctgtct gtactggaac catcacaggc ttttgaggaa ctacttttga accgttcccc
180
agagaggcat ttgccccagt agctatgatt ataatttgca atgacagcca cagtgatttc
240
atccttctgg gcttctctaa caagccacat ttggagaaga tacttttng gatcattttt
300
atttttatt ttttgactct tgcaggaaat atggtcatag ttcttgtgtc cttgaaggat
360
ccaaaactcc acatccctat gtatttcttt ctttccaacc tttccttggt agacctctgt
420
ttgaccagca gctgtgttcc acagatgttg attaacttct ggggcccaga aaagaccatc
480
agctacattg gctgtgccat tcaactctat gtttttttgt ggcttggggc cacggaatat
540
```

```
gtccttcttg ttgtcatggc tgtggattgt tatgtagcag tgtgtcatcc actgcaaaat
600
accatgatca tgcacccaaa actttgtctg cagctggcta tcttggcatg ggggactggc
660
ttggcccagt ctctgatcca gtccctgcc accctccggt taccttctg ctcccagcgg
720
atggtggatg atgttgtttg tgaagtccca gctctgattc agctctccag tactgatact
780
acctacagtg aaattcagat gtctatcgcc agtgttgtcc tcctggtgat gcccttgatc
840
attatccttt cctcttctgg tgctattgct aaggctgtgc tgagaattaa gtcaactgca
900
ggacagaaga aagcatttgg cacctgcatc tctcaccttc ttgtggtttc tctcttttat
960
ggcactgtca caggtgtcta ccttcaacca aaaaatcact atcctcatga atggggcaaa
1020
tttctcactc ttttctacac tgtagtaacc ccaactctta atcccctcat ctacactcta
1080
aggaacaagg aggtaaaggg agcactaata agattggggga ggaggacctg ggattcccag
1140
aataactaac aaggttaaca tatgtttacc tttgcttaac ctaagaatag agaacaacct
1200
catcacaaaa agctggagat acacctccta agccaaaagt aggagagaaa gagctgcatt
1260
ctgttcaggt tgagatttca gtttccttca tcaatcaatt gggcccttaa attcttcata
1320
ttgtggattt agacacagta tggtataaaa attaatatat ttaatagcta ttgtcttgaa
1380
aaggacacaa tgcaattgaa tgggggagga ggagaagaca caagaaacac attacttgca
1440
aaataaaata
1450


<210> 5120
<211> 314
<212> PRT
<213> Homo sapiens

<400> 5120
Met Ile Ile Ile Cys Asn Asp Ser His Ser Asp Phe Ile Leu Leu Gly
1               5                   10                  15
Phe Ser Asn Lys Pro His Leu Glu Lys Ile Leu Phe Xaa Ile Ile Phe
                20                  25                  30
Ile Phe Tyr Phe Leu Thr Leu Ala Gly Asn Met Val Ile Val Leu Val
            35                  40                  45
Ser Leu Lys Asp Pro Lys Leu His Ile Pro Met Tyr Phe Phe Leu Ser
        50                  55                  60
Asn Leu Ser Leu Val Asp Leu Cys Leu Thr Ser Ser Cys Val Pro Gln
65                  70                  75                  80
Met Leu Ile Asn Phe Trp Gly Pro Glu Lys Thr Ile Ser Tyr Ile Gly
                85                  90                  95
Cys Ala Ile Gln Leu Tyr Val Phe Leu Trp Leu Gly Ala Thr Glu Tyr
                100                 105                 110
Val Leu Leu Val Val Met Ala Val Asp Cys Tyr Val Ala Val Cys His
```

```
             115                        120                        125
Pro Leu Gln Asn Thr Met Ile Met His Pro Lys Leu Cys Leu Gln Leu
        130                    135                    140
Ala Ile Leu Ala Trp Gly Thr Gly Leu Ala Gln Ser Leu Ile Gln Ser
145                    150                    155                    160
Pro Ala Thr Leu Arg Leu Pro Phe Cys Ser Gln Arg Met Val Asp Asp
                165                    170                    175
Val Val Cys Glu Val Pro Ala Leu Ile Gln Leu Ser Ser Thr Asp Thr
                180                    185                    190
Thr Tyr Ser Glu Ile Gln Met Ser Ile Ala Ser Val Val Leu Leu Val
        195                    200                    205
Met Pro Leu Ile Ile Ile Leu Ser Ser Ser Gly Ala Ile Ala Lys Ala
        210                    215                    220
Val Leu Arg Ile Lys Ser Thr Ala Gly Gln Lys Lys Ala Phe Gly Thr
225                    230                    235                    240
Cys Ile Ser His Leu Leu Val Val Ser Leu Phe Tyr Gly Thr Val Thr
                245                    250                    255
Gly Val Tyr Leu Gln Pro Lys Asn His Tyr Pro His Glu Trp Gly Lys
                260                    265                    270
Phe Leu Thr Leu Phe Tyr Thr Val Val Thr Pro Thr Leu Asn Pro Leu
        275                    280                    285
Ile Tyr Thr Leu Arg Asn Lys Glu Val Lys Gly Ala Leu Ile Arg Leu
        290                    295                    300
Gly Arg Arg Thr Trp Asp Ser Gln Asn Asn
305                    310
```

```
<210> 5121
<211> 944
<212> DNA
<213> Homo sapiens

<400> 5121
nngcgcgcca ggggagggcg ccgtgtggca ctcggcggtc gaaaggggag ttcaaggaga
60
cggggcgac gcggctgagg gcttctcgtc ggggtcgggg ctgcagccgt catgccgggg
120
atagtggagc tgcccactct agaggagctg aaagtagatg aggtgaaaat tagttctgct
180
gtgcttaaag ctgcggccca tcactatgga gctcaatgtg ataagcccaa caaggagttt
240
atgctctgcc gctgggaaga gaaagatccg aggcggtgtt tagaggaagg caaactggtc
300
aacaagtgtg ctttggactt ctttaggcag ataaaacgtc actgtgcaga gcctttttaca
360
gaatattgga cttgcattga ttatactggc cagcagttat ttcgtcactg tcgcaaacag
420
caggcaaagt ttgacgagtg tgtgctggac aaactgggct gggtgcggcc tgacctggga
480
gaactgtcaa aggtcaccaa agtgaaaaca gatcgacctt taccggagaa tccctatcac
540
tcaagaccaa gaccggatcc cagccctgag atcgaggag atctgcagcc tgccacacat
600
ggcagccgct tttatttctg gaccaagtaa agatgggtcc gtggcccaca ctcggtcatg
660
```

tgctcagaca acgactgatg aaaacgccca tgcggtttgc atcgactgat agtgtgttct
720

ttccgggatc acaaacatta acaaaaaagt taacttatgt gacttggcag ttattctata
780

ccatttcctg tccattaaaa tttttaaagg aaacggttgt attttattat gttttatgtg
840

acctttggc ctttaaagat gacttcccct tgctttttc ttcttgtggt cctgcctgtt
900

cctcttgctt tgctttaggc actcgctcat gtggctgggg atcc
944

<210> 5122
<211> 172
<212> PRT
<213> Homo sapiens

<400> 5122
Met Pro Gly Ile Val Glu Leu Pro Thr Leu Glu Glu Leu Lys Val Asp
1   5   10   15
Glu Val Lys Ile Ser Ser Ala Val Leu Lys Ala Ala Ala His His Tyr
            20   25   30
Gly Ala Gln Cys Asp Lys Pro Asn Lys Glu Phe Met Leu Cys Arg Trp
        35   40   45
Glu Glu Lys Asp Pro Arg Arg Cys Leu Glu Glu Gly Lys Leu Val Asn
    50   55   60
Lys Cys Ala Leu Asp Phe Phe Arg Gln Ile Lys Arg His Cys Ala Glu
65   70   75   80
Pro Phe Thr Glu Tyr Trp Thr Cys Ile Asp Tyr Thr Gly Gln Gln Leu
                85   90   95
Phe Arg His Cys Arg Lys Gln Gln Ala Lys Phe Asp Glu Cys Val Leu
            100   105   110
Asp Lys Leu Gly Trp Val Arg Pro Asp Leu Gly Glu Leu Ser Lys Val
        115   120   125
Thr Lys Val Lys Thr Asp Arg Pro Leu Pro Glu Asn Pro Tyr His Ser
    130   135   140
Arg Pro Arg Pro Asp Pro Ser Pro Glu Ile Glu Gly Asp Leu Gln Pro
145   150   155   160
Ala Thr His Gly Ser Arg Phe Tyr Phe Trp Thr Lys
                165   170

<210> 5123
<211> 1139
<212> DNA
<213> Homo sapiens

<400> 5123
nngtgcacaa ccactgtctt cccgtggcct cactgccccc ttgccctagg gccccttcct
60

tggctctgtg ccagcctcgg gggacctcag gctcaccaac tctgaggctg agagttccaa
120

agccatagga tagatcctgg agcttccctg agcctgtttt cttgcctggg agttagccat
180

gccttgtggg gctgccaaga gggtaaagta gagagatggg tctagcttga tacagtatag
240

```
gcagctgctg gatgtcagct gtggttatga tcagctccat cttgttatga tgaagaccct
300
gaggtcagag tggacccac cccaaagccc catctggcag ctcacagctg ctctctccta
360
cagaaacagg cttgcatgct gatccgaaac ctggtggccc acggccaggc cttctcgaag
420
cccatcctgg acctgggggc tgaggcactc atcatgcagg cccgatctgc ccaccgtgac
480
tgtgaggacg tggccaaggc cgccctgcgg gacctgggtt gtcatgtcga gctccgagag
540
ctgtggacag gccagagggg caacctggcg ccatgacccc aggcccagtc tgggccgtga
600
ctctgggtga gtcgtgtgac tcaggaatgg gggtagatcc atgtcctcca ctgtcccca
660
ttagttctgt ccccttcaca atgagaagtg ttttctggca ggccctaggt aaagggtcgg
720
gggagggggg agccttgtag ggaggcctct acacagaaga aagcagcccc catgtcccag
780
ccacttctgg gtcccagcca gcagcacgga tgttactgtc ctgctccttc ccccagcccc
840
acgccctacc agagggggca aagggcacgt cccatcactc actgccctgt ctgaaatgtg
900
gcagccactg tgggccaggc tcagggcagg gcaggcgatt ccagtggggt tgggccccct
960
ggcgcctgct gcttactgca gtttcatgca ggcctctgct ccttgtcttt cttacctgta
1020
aaatgggtct cagatgctcc gccctgcttg gccccagctt gtctgtctct gggtcctggg
1080
ccagccagga tacctgataa taaaagatca ttgggtgaaa aaaaaaaaaa aaaaaaaaa
1139
```

<210> 5124
<211> 101
<212> PRT
<213> Homo sapiens

<400> 5124

```
Ser Ala Pro Ser Cys Tyr Asp Glu Asp Pro Glu Val Arg Val Asp Pro
1               5               10              15
Thr Pro Lys Pro His Leu Ala Ala His Ser Cys Ser Leu Leu Gln Lys
            20              25              30
Gln Ala Cys Met Leu Ile Arg Asn Leu Val Ala His Gly Gln Ala Phe
        35              40              45
Ser Lys Pro Ile Leu Asp Leu Gly Ala Glu Ala Leu Ile Met Gln Ala
    50              55              60
Arg Ser Ala His Arg Asp Cys Glu Asp Val Ala Lys Ala Ala Leu Arg
65              70              75              80
Asp Leu Gly Cys His Val Glu Leu Arg Glu Leu Trp Thr Gly Gln Arg
                85              90              95
Gly Asn Leu Ala Pro
                100
```

<210> 5125
<211> 6244

<212> DNA
<213> Homo sapiens

<400> 5125

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ngcccacccg atccaggacc acaccattca tggggatcat agataaaaca gcacggactc
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agcagtaccc ccacctccac cagcagaatc ggacctgggc agtgtcatct gtggacaccg
120
tcctcagtcc cacgtctcca ggcaacctgc ctcagcctga gtccttcagt ccaccatcat
180
ccatcagcaa cattgccttt tataacaaaa ccaacaatgc acagaatggc catttgctgg
240
aggacgatta ttacagcccc catgggatgc tggctaacgg gtctcgtgga gacctcttgg
300
agcgagtcag ccaggcctcc tcctatcccg acgtgaaggt agctcggact ctacctgtgg
360
ctcaggcata ccaggacaac ctgtacaggc agctgtcccg agactctcgg caagggcaga
420
catcccctat caaaccaaag agaccgttcg tggagtctaa tgtttaaaag acgttttgtt
480
ggagtgagac ccatatgttt tcactgcaca ttttcaggct tggtttccac attcgaggta
540
gttctctggc ttaatttctc atgtagtttc tgtgtggtgt tcagaggtgg cagcccacat
600
gctgaaatcc tttgcatgca gccgactggg aagcggcctc ccgggagcca ggacttcagt
660
ttctcttgtc tgtgcccagc cacatgctct ctccctctct tcagatgcca acgaggagat
720
tttcgtgctg tgtgctttaa cccagggaga tcagacacac tggtcagctt tttccaggag
780
acaatcgctt tcactgatgt tcttgttgtg taattgtctt tttccttttt taaaaaataa
840
ggtgttcttg ttcgtttttct tctagaaact ttagaaagag tgcgatgccc ctttgccttt
900
gcatccttag ccagtgtcac ccacacagcc agccgcagcg cattctcatg ctgtggcccc
960
tccccagacc gccagcgccc tgcagccacc aggtctgcag tgtgcattag gattattgct
1020
ggtcttccta gggggtaaaa ggatcagaga gagaagaatt aagtgctaaa ttggaagaaa
1080
accccaatat agttatgtaa aatgtcacta cattgatttt ccaagaggca ttgtaggaac
1140
atgtcaaaaa cagccagccc tttaaatatt gcagtcagcc aaggaaatta gatgagaatt
1200
gtggctatta agagaattca ctgagagtta ttctctagat ttttagccga caattaacca
1260
ctaaaagctg ctgcttttcc agggtggggg agggaatgaa tacatagaaa aacaaaaaag
1320
attgttctgg attctcagtg aaaggctata ggaagtctgt tctggagaca tctacttttt
1380
agatcctgat acatcactga gtgtcatact ccactaaaag gaaactctaa ccgaaggctg
1440
gctggtgtga caatcccgtt agttggatct tcacctacag ccagattttg ctctagtggc
1500
```

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cctcttcctg taaacccaga tggcgtcata cagaaattgt ttctttcaga agcagattgg
1560
aatctcttgg gaccatgaga ctgagtccca atatttccac ccagggtcat gcccgttgtt
1620
gtctacttcc attttgagat ctatagtttg attatctatt attacaggaa ctgtttcttt
1680
tcttttttcta ggagtgttta tgagagtgtg atattttaaa gtcagacgca gcaaaaactg
1740
tttcagggtg aagaaagacc cctttcagcc ctgttttgca gccctgggtg ggggcatgag
1800
atagacagca agcttctgat cttgaagctt gtctagaaga cacatcttct aggtctcgtg
1860
gtcatttggt aggctgacct ttgagtgagc gaggccacta ttgagtggat agcaagaaca
1920
ttggaaccaa agcctcggca caggcctggc actggctgta catcagctct tacaactaaa
1980
caactcaact aagcaactga aacgaaacaa aggagcattc gttctctgtt gttaggaatc
2040
attctgctct gttagggaag ggctgcagga agggcagttt cctgaataaa aatctggctg
2100
cgaccagtcc catgtgtctg gtaagtaagt aagtaagtaa gtgccctttg aagggatcat
2160
taagacacag ggagcatgaa_cctgagatca_gaagcatttc .tttactaatt tagattctgc
2220
gaaatagacg gacctctcca cccccaaacc taaaacaggc caggacttgt ctctgtgctg
2280
aaagcaaata gcaagactaa ctcaagcccc agcctctttc cacactccct gatacctaag
2340
gactgctttc tcagctagac cagggtgggc atcagcgacg ccttctcagc tagaccaggg
2400
taggcatcag cgtcctctct ccatctctat acccctctct ctcacatcag gaagatgaaa
2460
tgtgtagctc tagcggcaac ctctagccag gagcccagtg gcctctcaga ttgctttttg
2520
gccaggtctc agcactgctg gcatctttac atcttactcc ttaaaaccgc ctctcgctga
2580
ggagccactg cattttgaag aatttctcag tgtctgtcag gaaagtactc ctgctcattt
2640
ggaacgccac acaccacccg cactcacctg tccaggcgaa tgagcaggtc ctgtagcttt
2700
acaaatatgc cgctgatgcc gcttctcccc agggtctctc agttttccag gacaaaaaga
2760
tttagggcct ataccctatg ggcaaaacac ctaaaatgtc aacagtcaaa atgccattct
2820
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2880
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2940
gccctgtgcc ctgtttgcta cttcactgcc atggaatgat ccgagtactg tatttcagag
3000
ctgcccttc cccagcagca aacactcgct gagtccatgt ctggcttcag gtgggaggaa
3060
atgtttcaga tgaaacttac tcaattcata ccaccctgaa atggaggaca gaggtgacaa
3120
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acttcagttt aataggtttc tcaccaagtt gtatgttcca ttggcccagg attcttgcac
3180
taatgggttt ctatcacatc atgtctataa atgggtgcac tttactgttt gaatttgtaa
3240
ctgaagtact ggatatttaa gtgtgagtaa tgtcttcatt agaaaatagc agaaccgctc
3300
ttgtctttta gtgtattttt caagaaaaaa ggaaaggaaa gacatcaagc agtggatcac
3360
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3420
atatgaaaaa tatttgcagt gattttaaag tgcttttcca gcaatgttct tagggactcc
3480
tgagacacgg ttactttatc tactggatca gtaaggcaca caattaacaa ttaacaatta
3540
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3600
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3660
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3720
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3780
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3840
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3900
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3960
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4020
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4080
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4200
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4260
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4320
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4380
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4440
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4500
tcactgaatc tttgccacaa aatggaatag ctatcccag ggggcaagag gtgcccgccc
4560
ctgtgcccag cctcctcttg atgctcccag tgcccagcag cctcgcacac cctgcctgtc
4620
tgttcctggg ctgcccattt ctcaagaaac cgacctgcaa aggcagccgg ctgctgcctc
4680
cacaccgagg gctgtgcggt cctgctgctc gctcactggg aggtgcagct ctttctcctc
4740
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```
ttcctctagg aattccagac cgaccatcta ccatgactaa caacaatgaa caaagggctt
4800
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4860
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4920
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4980
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5040
gcctcacagc aggtgagcca ccctgagatg cttgtggcca catggtggcc acagtcagag
5100
ctttgaaagt cagtaccaaa tgaacgcata attggacacc aaaaatcaag tgttactttc
5160
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5220
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5280
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5340
ctgaattttt cttttgctaa tcgctaacca gaaagtctgg ttagagggggg ctcaactcaa
5400
tcccttggt ccccagcgcc agacaagagt taattctgga aaattcagta cttgaatgta
5460
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5520
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5640
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5700
gtctctgttc tgtctcctcc aaatccaaga tgattttaat tagtacagac atgtacagtc
5760
tacaattaaa gagtgatttg tactaatatg attttgattc ttcctcctct ttgctgtcct
5820
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5880
ctcagatgta aaggactttc tctgtacagt atattatcca atgcatgttt gttctctctc
5940
ctgatatatt gaacaccaca cagttgtgaa gccgtgcagt ggggatgccc cacaccccac
6000
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6060
gttttattgt ctgtacatgt gagctgtgtg agatagatgt gaaaagttca aatgaatgca
6120
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6240
aaaa
6244
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<210> 5126

<211> 117
<212> PRT
<213> Homo sapiens

<400> 5126
Met Phe Lys Arg Arg Phe Val Gly Val Arg Pro Ile Cys Phe His Cys
1   5   10   15
Thr Phe Ser Gly Leu Val Ser Thr Phe Glu Val Val Leu Trp Leu Asn
            20   25   30
Phe Ser Cys Ser Phe Cys Val Val Phe Arg Gly Gly Ser Pro His Ala
        35   40   45
Glu Ile Leu Cys Met Gln Pro Thr Gly Lys Arg Pro Pro Gly Ser Gln
    50   55   60
Asp Phe Ser Phe Ser Cys Leu Cys Pro Ala Thr Cys Ser Leu Pro Leu
65   70   75   80
Phe Arg Cys Gln Arg Gly Asp Phe Arg Ala Val Cys Phe Asn Pro Gly
                85   90   95
Arg Ser Asp Thr Leu Val Ser Phe Phe Gln Glu Thr Ile Ala Phe Thr
            100   105   110
Asp Val Leu Val Val
        115

<210> 5127
<211> 400
<212> DNA
<213> Homo sapiens

<400> 5127
ggtaccgcgc caatgcctct cgggaggccc tgcggaccgg ctctggggtg cgttttcccg
60
agttcgtcca gtacctgctg gacgtgcacc ggcccgtggg gatggacatt cactgggacc
120
atgtcagccg gctctgcagc ccctgcctca tcgactacga tttcgtaggc aagttcgaga
180
gcatggagga cgatgccaac ttcttcctga gcctcatccg cgcgccgcgg aacctgacct
240
tcccccggtt caaggaccgg cactcgcagg aggcgcggac cacagcgagg atcgcccacc
300
agtacttcgc ccaactctcg gccctgcaaa ggcagcgcac ctacgacttc tactacatgg
360
attacctgat gttcaactat tccaagccct ttgcagatct
400

<210> 5128
<211> 55
<212> PRT
<213> Homo sapiens

<400> 5128
Gly Thr Ala Pro Met Pro Leu Gly Arg Pro Cys Gly Pro Ala Leu Gly
1   5   10   15
Cys Val Phe Pro Ser Ser Ser Ser Thr Cys Trp Thr Cys Thr Gly Pro
            20   25   30
Trp Gly Trp Thr Phe Thr Gly Thr Met Ser Ala Gly Ser Ala Ala Pro

```
        35                    40                    45
Ala Ser Ser Thr Thr Ile Ser
     50                    55
```

<210> 5129
<211> 745
<212> DNA
<213> Homo sapiens

<400> 5129

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accggtgaac aggatccccc aggaaatggg gaggaagcct agagagaagg gccagatcgt
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aggccaagac ccccgcctgt gtctctgttc actggcagcg gagcgaggag agaggtgtgg
120
gctgacctga aaccagcacc tcctgtgtcc ccagctgagc cctgcacggg attggccaaa
180
tgtgctgctc tgcggccgcc ctgctgcccc ccccctgggt ggagctgggg tctgggacag
240
tgaagatggc tcccacagct gaggggcact gggtgccaag agcctgccag accctgggcc
300
acccagaaac atgctctgat agtgcagctg tgagcactgg cctgcgtccc ctccacccag
360
ccgacctatg aggctcaggg tgcttggggg cccatcaagg acatagtcct agctgccgac
420
tcatccaggc agcctgcaca acccctggct cccctccacc ggccacctgc ccccctgcac
480
aggcaggatc cggcctcgcc cacccacagg cctgcacctc cgggcccacg gcagcaagat
540
tcctatcttg gggatgcttt cctccctttg ccgagagacc cacccccccc acaccttgcc
600
tctcttcaag gagccgaaaa tgcagctgcc gactgatttg ctgtggagct aaaaataact
660
gccgggctcc agccagggcc caggaaaata tcccattgct aggagacaac cgttgccggg
720
agaccgccat tgctaggcga cgcgt
745
```

<210> 5130
<211> 111
<212> PRT
<213> Homo sapiens

<400> 5130

```
Met Ala Val Ser Arg Gln Arg Leu Ser Pro Ser Asn Gly Ile Phe Ser
1                   5                   10                  15
Trp Ala Leu Ala Gly Ala Arg Gln Leu Phe Leu Ala Pro Gln Gln Ile
            20                  25                  30
Ser Arg Gln Leu His Phe Arg Leu Leu Glu Glu Arg Gln Gly Val Gly
        35                  40                  45
Gly Val Gly Leu Ser Ala Lys Gly Gly Lys His Pro Gln Asp Arg Asn
    50                  55                  60
Leu Ala Ala Val Gly Pro Glu Val Gln Ala Cys Gly Trp Ala Arg Pro
65                  70                  75                  80
Asp Pro Ala Cys Ala Gly Gly Gln Val Ala Gly Gly Gly Glu Pro Gly
```

```
                     85                 90                  95
Val Val Gln Ala Ala Trp Met Ser Arg Gln Leu Gly Leu Cys Pro
             100                 105                 110
```

<210> 5131
<211> 789
<212> DNA
<213> Homo sapiens

<400> 5131
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atgaggaacc tgcagctcag gttcgagaag ggccgcatct acacctacat cggtgaggtg
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ctggtgtccg tgaacccta ccaggagctg ccctgtatg ggcctgaggc catcgcccag
120
taccagggcc gtgagctcta tgagcggcca ccccatctct atgctgtggc caacgccgcc
180
tacaaggcaa tgaagcaccg gtccagggac acctgcatcg tcatctcagg ggagagtggg
240
gcagggaaga cagaagccag taagcacatc atgcagtaca tcgctgctgt caccaatcca
300
agccagaggg ctgaggtgga gagggtcaag gacgtgctgc tcaagtccac ctgtgtgctg
360
gaggcctttg gcaatgcccg caccaaccgc aatcacaact ccagccgctt tggcaagtac
420
atggacatca actttgactt caaggggggac ccgatcggag gacacatcca gctaccta
480
ctggagaagt ctcgggtcct caagcagcac gtgggtgaaa gaaacttcca cgccttctac
540
caattgctga gaggcagtga ggacaagcag ctgcatgaac tgcacttgga gagaaaccct
600
gctgtataca atttcacaca ccagggagca ggactcaaca tgactgtgca cagtgccttg
660
gacagtgatg agcagagcca ccaggcagtg accgaggcca tgagggtcat cggcttcagt
720
cctgaagagg tggagtctgt gcatcgcatc ctggctgcca tattgcacct gggaaacatc
780
gagtttgtg
789
```

<210> 5132
<211> 263
<212> PRT
<213> Homo sapiens

<400> 5132
```
Met Arg Asn Leu Gln Leu Arg Phe Glu Lys Gly Arg Ile Tyr Thr Tyr
 1               5                  10                  15
Ile Gly Glu Val Leu Val Ser Val Asn Pro Tyr Gln Glu Leu Pro Leu
             20                  25                  30
Tyr Gly Pro Glu Ala Ile Ala Gln Tyr Gln Gly Arg Glu Leu Tyr Glu
         35                  40                  45
Arg Pro Pro His Leu Tyr Ala Val Ala Asn Ala Ala Tyr Lys Ala Met
     50                  55                  60
Lys His Arg Ser Arg Asp Thr Cys Ile Val Ile Ser Gly Glu Ser Gly
```

```
65                    70                    75                    80
Ala Gly Lys Thr Glu Ala Ser Lys His Ile Met Gln Tyr Ile Ala Ala
                 85                    90                    95
Val Thr Asn Pro Ser Gln Arg Ala Glu Val Glu Arg Val Lys Asp Val
             100                   105                   110
Leu Leu Lys Ser Thr Cys Val Leu Glu Ala Phe Gly Asn Ala Arg Thr
         115                   120                   125
Asn Arg Asn His Asn Ser Ser Arg Phe Gly Lys Tyr Met Asp Ile Asn
     130                   135                   140
Phe Asp Phe Lys Gly Asp Pro Ile Gly Gly His Ile His Ser Tyr Leu
145                   150                   155                   160
Leu Glu Lys Ser Arg Val Leu Lys Gln His Val Gly Glu Arg Asn Phe
                 165                   170                   175
His Ala Phe Tyr Gln Leu Leu Arg Gly Ser Glu Asp Lys Gln Leu His
             180                   185                   190
Glu Leu His Leu Glu Arg Asn Pro Ala Val Tyr Asn Phe Thr His Gln
         195                   200                   205
Gly Ala Gly Leu Asn Met Thr Val His Ser Ala Leu Asp Ser Asp Glu
     210                   215                   220
Gln Ser His Gln Ala Val Thr Glu Ala Met Arg Val Ile Gly Phe Ser
225                   230                   235                   240
Pro Glu Glu Val Glu Ser Val His Arg Ile Leu Ala Ala Ile Leu His
                 245                   250                   255
Leu Gly Asn Ile Glu Phe Val
                 260
```

```
<210> 5133
<211> 581
<212> DNA
<213> Homo sapiens

<400> 5133
actatgtctg agtaggcagc cggtaacaca atgtctccct tgtgcaaagt aactctctta
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gtgagtgctc agatatgtga ggaaaaagta tttggtggag tgtgacaata tgaaccgctt
120
tgaccgacca gacagaaatg ttcggcagcc tcaggaaggt ttttggaaaa ggccacccca
180
gaggtggagt ggacaggagc attaccacct cagccaccct gaccactatc atcaccatgg
240
aaaaagtgac ttgagcagag gctctcccta tagagaatct cctttgggtc attttgaaag
300
ctatggaggg atgccctttt tccaggctca gaagatgttt gttgatgtac agaaaatac
360
agtgatactg gatgagatga cccttcggca catggttcag gattgcactg ctgtaaaaac
420
tcagttactc aaactgaaac gtctcctgca tcagcatgat ggaagtggtt cattgcatga
480
tattcaactg tcattgccat ccagtccaga accagaagat ggtgataaag tatataagaa
540
tgaagattta ttaaatgaaa taaaacaact taaagacgaa a
581


<210> 5134
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<211> 157
<212> PRT
<213> Homo sapiens

<400> 5134
Met Asn Arg Phe Asp Arg Pro Asp Arg Asn Val Arg Gln Pro Gln Glu
 1   5   10   15
Gly Phe Trp Lys Arg Pro Pro Gln Arg Trp Ser Gly Gln Glu His Tyr
                20   25   30
His Leu Ser His Pro Asp His Tyr His His His Gly Lys Ser Asp Leu
                35   40   45
Ser Arg Gly Ser Pro Tyr Arg Glu Ser Pro Leu Gly His Phe Glu Ser
    50   55   60
Tyr Gly Gly Met Pro Phe Phe Gln Ala Gln Lys Met Phe Val Asp Val
65   70   75   80
Pro Glu Asn Thr Val Ile Leu Asp Glu Met Thr Leu Arg His Met Val
                85   90   95
Gln Asp Cys Thr Ala Val Lys Thr Gln Leu Leu Lys Leu Lys Arg Leu
                100   105   110
Leu His Gln His Asp Gly Ser Gly Ser Leu His Asp Ile Gln Leu Ser
            115   120   125
Leu Pro Ser Ser Pro Glu Pro Glu Asp Gly Asp Lys Val Tyr Lys Asn
        130   135   140
Glu Asp Leu Leu Asn Glu Ile Lys Gln Leu Lys Asp Glu
145   150   155

<210> 5135
<211> 1696
<212> DNA
<213> Homo sapiens

<400> 5135
nnctgcgagc gcctgcccca tgcgccgccg cctctccgca cgatgttccc ctcgcggagg
60
aaagcggcgc agctgccctg ggaggacggc aggtccgggt tgctctccgg cggcctccct
120
cggaagtgtt ccgtcttcca cctgttcgtg gcctgcctct cgctgggctt cttctcccta
180
ctctggctgc agctcagctg ctctggggac gtggcccggg cagtcagggg acaagggcag
240
gagacctcgg gccctccccg cgcctgcccc ccagagccgc cccctgagca ctgggaagaa
300
gacgcatcct ggggccccca ccgcctggca gtgctggtgc ccttccgcga acgcttcgag
360
gagctcctgg tcttcgtgcc ccacatgcgc cgcttcctga gcaggaagaa gatccggcac
420
cacatctacg tgctcaacca ggtggaccac ttcaggttca accgggcagc gctcatcaac
480
gtgggcttcc tggagagcag caacagcacg gactacattg ccatgcacga cgttgacctg
540
ctccctctca cgaggagct ggactatggc tttcctgagg ctgggccctt ccacgtggcc
600
tccccggagc tccaccctct ctaccactac aagacctatg tcggcggcat cctgctgctc
660

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tccaagcagc actaccggct gtgcaatggg atgtccaacc gcttctgggg ctggggccgc
720
gaggacgacg agttctaccg gcgcattaag ggagctgggc tccagctttt ccgcccctcg
780
ggaatcacaa ctgggtacaa gacatttcgc cacctgcacg acccagcctg gcggaagagg
840
gaccagaagc gcatcgcagc tcaaaaacag gagcagttca aggtggacag ggagggaggc
900
ctgaacactg tgaagtacca tgtggcttcc cgcactgccc tgtctgtggg cggggccccc
960
tgcactgtcc tcaacatcat gttggactgt gacaagaccg ccacaccctg gtgcacattc
1020
agctgagctg gatggacagt gaggaagcct gtacctacag gccatattgc tcaggctcag
1080
gacaaggcct caggtcgtgg gcccagctct gacaggatgt ggagtggcca ggaccaagac
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1200
cgtggggtgc ctgggacgct gcttgccatg cacagtgatc agagagaggc tggggtgtgt
1260
cctgtccggg accccccctg ccttcctgct caccctactc tgacctcctt cacgtgccca
1320
ggcctgtggg tagtggggag ggctgaacag gacaacctct catcacccccc acttttgttc
1380
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1440
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1500
ggaacagcca gcaccgctct agctggttgt tgccatgccg gaatgtgggc ctagtgttgc
1560
cagatcttct gatttttcga aagaaactag aatgctggat cttaagtga tatcttctga
1620
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1680
aaaaaaaaaa aaaaaa
1696
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```
<210> 5136
<211> 341
<212> PRT
<213> Homo sapiens
```

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<400> 5136
Xaa Cys Glu Arg Leu Pro His Ala Pro Pro Pro Leu Arg Thr Met Phe
1               5               10              15
Pro Ser Arg Arg Lys Ala Ala Gln Leu Pro Trp Glu Asp Gly Arg Ser
            20              25              30
Gly Leu Leu Ser Gly Gly Leu Pro Arg Lys Cys Ser Val Phe His Leu
        35              40              45
Phe Val Ala Cys Leu Ser Leu Gly Phe Phe Ser Leu Leu Trp Leu Gln
    50              55              60
Leu Ser Cys Ser Gly Asp Val Ala Arg Ala Val Arg Gly Gln Gly Gln
65              70              75              80
Glu Thr Ser Gly Pro Pro Arg Ala Cys Pro Pro Glu Pro Pro Pro Glu
```

```
                    85                    90                    95
His Trp Glu Glu Asp Ala Ser Trp Gly Pro His Arg Leu Ala Val Leu
                100                   105                   110
Val Pro Phe Arg Glu Arg Phe Glu Glu Leu Leu Val Phe Val Pro His
            115                   120                   125
Met Arg Arg Phe Leu Ser Arg Lys Lys Ile Arg His His Ile Tyr Val
        130                   135                   140
Leu Asn Gln Val Asp His Phe Arg Phe Asn Arg Ala Ala Leu Ile Asn
145                   150                   155                   160
Val Gly Phe Leu Glu Ser Ser Asn Ser Thr Asp Tyr Ile Ala Met His
                165                   170                   175
Asp Val Asp Leu Leu Pro Leu Asn Glu Glu Leu Asp Tyr Gly Phe Pro
            180                   185                   190
Glu Ala Gly Pro Phe His Val Ala Ser Pro Glu Leu His Pro Leu Tyr
        195                   200                   205
His Tyr Lys Thr Tyr Val Gly Gly Ile Leu Leu Leu Ser Lys Gln His
    210                   215                   220
Tyr Arg Leu Cys Asn Gly Met Ser Asn Arg Phe Trp Gly Trp Gly Arg
225                   230                   235                   240
Glu Asp Asp Glu Phe Tyr Arg Arg Ile Lys Gly Ala Gly Leu Gln Leu
                245                   250                   255
Phe Arg Pro Ser Gly Ile Thr Thr Gly Tyr Lys Thr Phe Arg His Leu
                260                   265                   270
His Asp Pro Ala Trp Arg Lys Arg Asp Gln Lys Arg Ile Ala Ala Gln
            275                   280                   285
Lys Gln Glu Gln Phe Lys Val Asp Arg Glu Gly Gly Leu Asn Thr Val
        290                   295                   300
Lys Tyr His Val Ala Ser Arg Thr Ala Leu Ser Val Gly Gly Ala Pro
305                   310                   315                   320
Cys Thr Val Leu Asn Ile Met Leu Asp Cys Asp Lys Thr Ala Thr Pro
                325                   330                   335
Trp Cys Thr Phe Ser
                340
```

```
<210> 5137
<211> 3090
<212> DNA
<213> Homo sapiens

<400> 5137
nngcggcgca atccggagag gacgccagga cgacgcccga gttcccttttc aggctagaac
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tcttcctttt tctagcttgg ggtagaaggc ggcgggangc cccggaaccc ccgccctcgg
120
ggtgcgaggc ggcanagggc cgtcccctac atttgcatag cccctgggac gtggcgctgc
180
acccaagcct cttctcagtt ggagggaact ccaagtccca cagtgccacg gggtggggtg
240
cgtcactttc gctgcgttgg aggctgagga gaattgagcc tgggaggcgg gtccggagag
300
ggctatggaa agccgccggc ggggaatccc ggccgtagag ggacagtgga taggtgcccg
360
aggcctacag ctggcctggg gctcgtgtct gggcttcgga cgttggggcc cggtggccca
420
```

```
cccttтccgt agttgtccca aatggagctg gaattggatg ctggtgacca agacctgctg
480
gccttcctgc tagaggaaag tggagatttg gggacggcac ccgatgaggc cgtgagggcc
540
ccactggact gggcgctgcc gctttctgag gtaccgagcg actgggaagt agatgatttg
600
ctgtgctccc tgctgagtcc cccagcgtcg ttgaacattc tcagctcctc caacccctgc
660
cttgtccacc atgaccacac ctactccctc ccacgggaaa ctgtctctat ggatctagag
720
agtgagagct gtagaaaaga ggggacccag atgactccac agcatatgga ggagctggca
780
gagcaggaga ttgctaggct agtactgaca gatgaggaga agagtctatt ggagaaggag
840
gggcttattc tgcctgagac acttcctctc actaagacag aggaacaaat tctgaaacgt
900
gtgcggagga agattcgaaa taaaagatct gctcaagaga ccgcaggaa aaagaaggtg
960
tatgttgggg gtttagagag cagggtcttg aaatacacag cccagaatat ggagcttcag
1020
aacaaagtac agcttctgga ggaacagaat ttgtcccttc tagatcaact gaggaaactc
1080
caggccatgg tgattgagat atcaaacaaa accagcagca gcagcacctg catcttggtc
1140
ctactagtct ccttctgcct cctccttgta cctgctatgt actcctctga cacaaggggg
1200
agcctgccag ctgagcatgg agtgttgtcc cgccagcttc gtgccctccc cagtgaggac
1260
ccttaccagc tggagctgcc tgccctgcag tcagaagtgc cgaaagacag cacacaccag
1320
tggttggacg gctcagactg tgtactccag gcccctggca acacttcctg cctgctgcat
1380
tacatgcctc aggctcccag tgcagagcct cccctggagt ggccattccc tgacctcttc
1440
tcagagcctc tctgccgagg tcccatcctc cccctgcagg caaatctcac aaggaaggga
1500
ggatggcttc ctactggtag cccctctgtc attttgcagg acagatactc aggctagata
1560
tgaggatatg tggggggtct cagcaggagc ctggggggct ccccatctgt gtccaaataa
1620
aaagcggtgg gcaagggctg gccgcagctc ctgtgccctg tcaggacgac tgagggctca
1680
aacacaccac acttaatggc tttctgggtc ttttatttgt acccatgtgt ctgtcacacc
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1800
gtgaggaaag aaataaataa gtgattctaa tgctgcctag gtcaccctca acccccattt
1860
actggcacaa ttgggtggag agaagggaag gggtatgatt gtcctgatgg ctcagggttg
1920
caggaggttc agaggggaag gaggaaaggc caggctggag gctgggctgt tagcacttcc
1980
ctcccacagt tcagacggct cactctgggc tcaggtttgc catggcttcc tttggtccaa
2040
```

```
acataggccc tgtccttagt cctgtgccct gtttgacttt tggccaggag gccttttttgt
2100
gctgctgctg ttgcagggct agctgcatgg cccatatgct cagtggccgc atgtaggcca
2160
gtgagcggaa cactcgctgc tggcagtatg cctctggggt ctggaaggcc agacccaggc
2220
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2280
cttggatcat ggtagctgcc agcccgtaga ccacacccac ccagacttca tcagactgca
2340
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2400
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2460
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2520
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2580
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2700
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2760
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2820
cagattccat cacagcctgc agcacaaact tcaggttcag gtccttccaa tcagcagtat
2880
catggattaa atatgcattg acgcggagcc atggttcatc atctgtggga gaggagggga
2940
cttgggtcac ttgcattggt ggatagggta gagggtgcaa aagttgaggg agggaagctg
3000
accttggggt ggacttttac ctgggttccc aatatcatgg gggatgacgt tcctcctttt
3060
cacaggtgcc atcaccccac tcatcangta
3090
```

```
<210> 5138
<211> 371
<212> PRT
<213> Homo sapiens
```

```
<400> 5138
Met Glu Leu Glu Leu Asp Ala Gly Asp Gln Asp Leu Leu Ala Phe Leu
1               5                   10                  15
Leu Glu Glu Ser Gly Asp Leu Gly Thr Ala Pro Asp Glu Ala Val Arg
                20                  25                  30
Ala Pro Leu Asp Trp Ala Leu Pro Leu Ser Glu Val Pro Ser Asp Trp
            35                  40                  45
Glu Val Asp Asp Leu Leu Cys Ser Leu Leu Ser Pro Pro Ala Ser Leu
        50                  55                  60
Asn Ile Leu Ser Ser Ser Asn Pro Cys Leu Val His His Asp His Thr
65                  70                  75                  80
Tyr Ser Leu Pro Arg Glu Thr Val Ser Met Asp Leu Glu Ser Glu Ser
```

```
                        85                    90                    95
Cys Arg Lys Glu Gly Thr Gln Met Thr Pro Gln His Met Glu Glu Leu
            100                 105                 110
Ala Glu Gln Glu Ile Ala Arg Leu Val Leu Thr Asp Glu Glu Lys Ser
            115                 120                 125
Leu Leu Glu Lys Glu Gly Leu Ile Leu Pro Glu Thr Leu Pro Leu Thr
            130                 135                 140
Lys Thr Glu Glu Gln Ile Leu Lys Arg Val Arg Arg Lys Ile Arg Asn
145                 150                 155                 160
Lys Arg Ser Ala Gln Glu Ser Arg Arg Lys Lys Lys Val Tyr Val Gly
                165                 170                 175
Gly Leu Glu Ser Arg Val Leu Lys Tyr Thr Ala Gln Asn Met Glu Leu
            180                 185                 190
Gln Asn Lys Val Gln Leu Leu Glu Glu Gln Asn Leu Ser Leu Leu Asp
            195                 200                 205
Gln Leu Arg Lys Leu Gln Ala Met Val Ile Glu Ile Ser Asn Lys Thr
            210                 215                 220
Ser Ser Ser Ser Thr Cys Ile Leu Val Leu Leu Val Ser Phe Cys Leu
225                 230                 235                 240
Leu Leu Val Pro Ala Met Tyr Ser Ser Asp Thr Arg Gly Ser Leu Pro
                245                 250                 255
Ala Glu His Gly Val Leu Ser Arg Gln Leu Arg Ala Leu Pro Ser Glu
                260                 265                 270
Asp Pro Tyr Gln Leu Glu Leu Pro Ala Leu Gln Ser Glu Val Pro Lys
            275                 280                 285
Asp Ser Thr His Gln Trp Leu Asp Gly Ser Asp Cys Val Leu Gln Ala
            290                 295                 300
Pro Gly Asn Thr Ser Cys Leu Leu His Tyr Met Pro Gln Ala Pro Ser
305                 310                 315                 320
Ala Glu Pro Pro Leu Glu Trp Pro Phe Pro Asp Leu Phe Ser Glu Pro
                325                 330                 335
Leu Cys Arg Gly Pro Ile Leu Pro Leu Gln Ala Asn Leu Thr Arg Lys
            340                 345                 350
Gly Gly Trp Leu Pro Thr Gly Ser Pro Ser Val Ile Leu Gln Asp Arg
            355                 360                 365
Tyr Ser Gly
    370
```

<210> 5139
<211> 1968
<212> DNA
<213> Homo sapiens

<400> 5139
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120
atctctacgg tagaattcaa ccacacggga gaattactag cgacagggga caagggggt
180
cgggttgtaa tatttcaacg agagcaggag agtaaaaatc aggttcatcg tagggtgaa
240
tacaatgttt acagcacatt ccagagccat gaacccgagt tcgattacct gaagagttta
300
```

```
gaaatagaag aaaaaatcaa taaaataaga tggctccccc agcagaatgc agcttacttt
360
cttctgtcta ctaatgataa aactgtgaag ctgtggaaag tcagcgagcg tgataagagg
420
ccagaaggct acaatctgaa agatgaggag ggccggctcc gggatcctgc caccatcaca
480
accctgcggg tgcctgtcct gagacccatg gacctgatgg tggaggccac cccacgaaga
540
gtatttgcca acgcacacac atatcacatc aactccatat ctgtcaacag cgactatgaa
600
acctacatgt ccgctgatga cctgaggatt aacctatgga actttgaaat aaccaatcaa
660
agttttaata ttgtggacat taagccagcc aacatggagg agctcacgga ggtgatcaca
720
gcagccgagt tccaccccca tcattgcaac accttcgtgt acagcagcag caaagggaca
780
atccggctgt gtgacatgcg ggcatctgcc ctgtgtgaca ggcacaccaa gttttttgaa
840
gagccggaag atccaagcaa cagatcattt ttctctgaaa ttatctcttc gatttcggat
900
gtgaagttca gccacagtgg gaggtatatc atgaccagag actacttgac cgtcaaagtc
960
tgggatctca acatggagag caggccggtg gagacccacc aggttcatga ctacctgcgc
1020
agcaagctct gctctctcta tgagaacgac tgcatctttg acaagtttga gtgtgtgtgg
1080
aatgggtcag acagtgtcat catgacaggc tcctataaca acttcttcag gatgtttgat
1140
agagacacca agcgtgatgt gacccttgag gcttcgaggg aaaacagcaa gccccgggct
1200
atcctcaaac cccgaaaagt gtgtgtgggg ggcaagcgga gaaaagacga gatcagtgtc
1260
gacagtctgg actttagcaa aaagatcctg cacacagcct ggcacccgt ggacaatgtc
1320
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1380
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1440
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1500
caggagaaag ccgcctccgc tggaggcccg gtgtggttcc gcctcggcga ggcgcgagac
1560
aggcgctgct gctcacgtgg agacgctctc gaagcagagt tgacggacac tgctcccaaa
1620
aggtcattac tcagaataaa tgtatttatt tcagtccgag ccttcctttc caatttatag
1680
accaaaaaat taacatccaa gagaaaagtt attgtcagat accgctcttt ctccaacttt
1740
ccctctttct ctgccatcac acttgggcct tcactgcagc gtggtgtggc caccgtccgt
1800
gtcctctcgg ccttcctccg agtccaggtg gactctgtgg atgtgtggat gtggcccgag
1860
caggctcagg cggccccact cacccacagc atccgccgcc acccttcgg gtgtgagcgc
1920
```

tcaataaaaa caacacacta taaagtgttt ttaaatccaa aaaaaaaa
1968

<210> 5140
<211> 443
<212> PRT
<213> Homo sapiens

<400> 5140

Met	Glu	Glu	Asp	Ile	Asp	Thr	Arg	Lys	Ile	Asn	Asn	Ser	Phe	Leu	Arg
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Asp	His	Ser	Tyr	Ala	Thr	Glu	Ala	Asp	Ile	Ile	Ser	Thr	Val	Glu	Phe
			20					25					30		
Asn	His	Thr	Gly	Glu	Leu	Leu	Ala	Thr	Gly	Asp	Lys	Gly	Gly	Arg	Val
			35				40					45			
Val	Ile	Phe	Gln	Arg	Glu	Gln	Glu	Ser	Lys	Asn	Gln	Val	His	Arg	Arg
	50					55					60				
Gly	Glu	Tyr	Asn	Val	Tyr	Ser	Thr	Phe	Gln	Ser	His	Glu	Pro	Glu	Phe
65					70					75					80
Asp	Tyr	Leu	Lys	Ser	Leu	Glu	Ile	Glu	Glu	Lys	Ile	Asn	Lys	Ile	Arg
				85					90					95	
Trp	Leu	Pro	Gln	Gln	Asn	Ala	Ala	Tyr	Phe	Leu	Leu	Ser	Thr	Asn	Asp
			100					105					110		
Lys	Thr	Val	Lys	Leu	Trp	Lys	Val	Ser	Glu	Arg	Asp	Lys	Arg	Pro	Glu
			115				120					125			
Gly	Tyr	Asn	Leu	Lys	Asp	Glu	Glu	Gly	Arg	Leu	Arg	Asp	Pro	Ala	Thr
		130				135					140				
Ile	Thr	Thr	Leu	Arg	Val	Pro	Val	Leu	Arg	Pro	Met	Asp	Leu	Met	Val
145					150					155					160
Glu	Ala	Thr	Pro	Arg	Arg	Val	Phe	Ala	Asn	Ala	His	Thr	Tyr	His	Ile
				165					170					175	
Asn	Ser	Ile	Ser	Val	Asn	Ser	Asp	Tyr	Glu	Thr	Tyr	Met	Ser	Ala	Asp
			180					185					190		
Asp	Leu	Arg	Ile	Asn	Leu	Trp	Asn	Phe	Glu	Ile	Thr	Asn	Gln	Ser	Phe
		195					200					205			
Asn	Ile	Val	Asp	Ile	Lys	Pro	Ala	Asn	Met	Glu	Glu	Leu	Thr	Glu	Val
	210					215					220				
Ile	Thr	Ala	Ala	Glu	Phe	His	Pro	His	His	Cys	Asn	Thr	Phe	Val	Tyr
225					230					235					240
Ser	Ser	Ser	Lys	Gly	Thr	Ile	Arg	Leu	Cys	Asp	Met	Arg	Ala	Ser	Ala
				245					250					255	
Leu	Cys	Asp	Arg	His	Thr	Lys	Phe	Phe	Glu	Glu	Pro	Glu	Asp	Pro	Ser
			260					265					270		
Asn	Arg	Ser	Phe	Phe	Ser	Glu	Ile	Ile	Ser	Ser	Ile	Ser	Asp	Val	Lys
		275					280					285			
Phe	Ser	His	Ser	Gly	Arg	Tyr	Ile	Met	Thr	Arg	Asp	Tyr	Leu	Thr	Val
	290					295					300				
Lys	Val	Trp	Asp	Leu	Asn	Met	Glu	Ser	Arg	Pro	Val	Glu	Thr	His	Gln
305					310					315					320
Val	His	Asp	Tyr	Leu	Arg	Ser	Lys	Leu	Cys	Ser	Leu	Tyr	Glu	Asn	Asp
			325					330					335		
Cys	Ile	Phe	Asp	Lys	Phe	Glu	Cys	Val	Trp	Asn	Gly	Ser	Asp	Ser	Val
		340					345					350			
Ile	Met	Thr	Gly	Ser	Tyr	Asn	Asn	Phe	Phe	Arg	Met	Phe	Asp	Arg	Asp

```
            355                      360                      365
Thr Lys Arg Asp Val Thr Leu Glu Ala Ser Arg Glu Asn Ser Lys Pro
        370                      375                      380
Arg Ala Ile Leu Lys Pro Arg Lys Val Cys Val Gly Gly Lys Arg Arg
385                      390                      395                      400
Lys Asp Glu Ile Ser Val Asp Ser Leu Asp Phe Ser Lys Lys Ile Leu
                405                      410                      415
His Thr Ala Trp His Pro Val Asp Asn Val Ile Ala Val Ala Ala Thr
                420                      425                      430
Asn Asn Leu Tyr Ile Phe Gln Asp Lys Ile Asn
        435                      440
```

```
<210> 5141
<211> 928
<212> DNA
<213> Homo sapiens

<400> 5141
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cagatggacg agggcggcgg cgtggtggtg taccaggacg actactgctc cggctcggtg
120
atgtcggagc gggtgtcggg cctggcgggc tccatctacc gcgagttcga gcgcctcatc
180
cactgctacg acgaggaggt ggtcaaggag ctcatgccgc tggtggtgaa cgtgctggag
240
aacctagact cggtgctcag cgagaaccag gagcacgagg tggagctgga gctgctgcgc
300
gaggacaacg agcagctgct cacccagtac gagcgtgaga aggcgctgcg caggcaggcg
360
gaggagaaat tcattgagtt tgaagatgct ctggaacaag agaagaaaga gctgcaaatc
420
caggtggagc actacgagtt ccagacgcgc cagctggagc tgaaggccaa gaactatgcc
480
gatcagattt cccggttgga ggagcgggag tcggagatga agaaggagta caatgccctg
540
caccagcggc acacagagat gatacagacc tacgtggagc acattgagag gtccaagatg
600
cagcaggtcg gaggaaacag ccagaccgag agcagcctgc cggggcggag caggaaggag
660
cgccccacct ccctgaacgt gttccccctg gctgacggca cggtacgtgc acagatcggg
720
ggcaagctcg tgcctgcggg ggaccactgg cacctgagtg acctcggcca gctgcagtcc
780
agctccagct accaggtttt gtagccgtgc cgtggagtga gaggttcctc ccctgttgct
840
ggtgttcccc gtttcactgg ggcgggagct tcgtctgcag gcagcccttc acgactctct
900
gggccactcg ccctctccct tcacgcgt
928

<210> 5142
<211> 227
<212> PRT
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4323

<213> Homo sapiens

<400> 5142
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Met Ser Glu Arg Val Ser Gly Leu Ala Gly Ser Ile Tyr Arg Glu Phe
1               5                   10                  15
Glu Arg Leu Ile His Cys Tyr Asp Glu Glu Val Val Lys Glu Leu Met
            20                  25                  30
Pro Leu Val Val Asn Val Leu Glu Asn Leu Asp Ser Val Leu Ser Glu
        35                  40                  45
Asn Gln Glu His Glu Val Glu Leu Glu Leu Leu Arg Glu Asp Asn Glu
    50                  55                  60
Gln Leu Leu Thr Gln Tyr Glu Arg Glu Lys Ala Leu Arg Arg Gln Ala
65                  70                  75                  80
Glu Glu Lys Phe Ile Glu Phe Glu Asp Ala Leu Glu Gln Glu Lys Lys
                85                  90                  95
Glu Leu Gln Ile Gln Val Glu His Tyr Glu Phe Gln Thr Arg Gln Leu
            100                 105                 110
Glu Leu Lys Ala Lys Asn Tyr Ala Asp Gln Ile Ser Arg Leu Glu Glu
        115                 120                 125
Arg Glu Ser Glu Met Lys Lys Glu Tyr Asn Ala Leu His Gln Arg His
    130                 135                 140
Thr Glu Met Ile Gln Thr Tyr Val Glu His Ile Glu Arg Ser Lys Met
145                 150                 155                 160
Gln Gln Val Gly Gly Asn Ser Gln Thr Glu Ser Ser Leu Pro Gly Arg
                165                 170                 175
Ser Arg Lys Glu Arg Pro Thr Ser Leu Asn Val Phe Pro Leu Ala Asp
            180                 185                 190
Gly Thr Val Arg Ala Gln Ile Gly Gly Lys Leu Val Pro Ala Gly Asp
            195                 200                 205
His Trp His Leu Ser Asp Leu Gly Gln Leu Gln Ser Ser Ser Ser Tyr
    210                 215                 220
Gln Val Leu
225
```

<210> 5143
<211> 1666
<212> DNA
<213> Homo sapiens

<400> 5143
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ccatgggaca aggagctcgc ggctggcaca gagagccagg ccttggtctc cgccactccc
120
cgagaagact ttcgggtgcg ctgcacctcg aagcgggctg tgaccgaaat gctacaactg
180
tgcggccgct tcgtgcaaaa gctcggggac gctctgccgg aggagattcg ggagcccgct
240
ctgcgagatg cgcagtggac ttttgaatca gctgtgcaag agaatatcag cattaatggg
300
caagcatggc aggaagcttc agataattgt tttatggatt ctgacatcaa agtacttgaa
360
gatcagtttg atgaaatcat agtagatata gccacaaaac gtaagcagta tcccagaaag
420
```

4324

```
atcctggaat gtgtcatcaa aaccataaaa gcaaaacaag aaattctgaa gcagtaccac
480
cctgttgtac atccactgga cctaaaatat gaccctgatc cagcccctca tatggaaaat
540
ttgaaatgca gaggggaaac agtagcaaag gagatcagtg aagccatgaa gtccttgcct
600
gcattaattg aacaaggaga gggattttcc caagttctca ggatgcagcc tgttatccac
660
ctccagagga ttcaccaaga agtcttttcc agttgtcata ggaaaccaga tgctaaacct
720
gagaacttta taacacagat agaaaccaca ccaacagaga ctgcttccag gaaaacctct
780
gacatggtac tgaaaagaaa gcaaactaaa gactgccccc agagaaaatg gtatccattg
840
cggccaaaga aaattaatct tgatacatga gctctttctg tttattttgg gagttgaaaa
900
taggcaccat caacatttag attacagcct aattaatacc tagataagac ttcatttgaa
960
ataagaaata actcttttac tagtgattca tttatacaga tatagtatct ctgtgcgggg
1020
atatgatata atattgtatt tccttactgt tttatctatt gtaaataaaa agcattttaa
1080
aaagtattga cacaaagccc atcagtgggc attaaaaata ttaaaagtgc agacttttac
1140
tgtccttaag tgccatcaac tctcagctcc cttgtagctt ttgtgggatt taacaagtaa
1200
caaattctgt tgtgtttccc tggtatacat ctttctagga aaaaaaaaa aagagagaga
1260
gctgtataat gattttcgt ttacatgctg aaaagtaatt atcagttctg cacagcagca
1320
gatgcagggt ttttttttaa agatgtagtt tgatttatca aattaatgtg ctgatgataa
1380
tactggcttt gactttgtta ctccatgttc agctaattta ggtttgtgag attaacttta
1440
ggattttttg ttgtgtaaga caatgataac tattatttgt gcaacattac tctttgaaat
1500
aaaaattggc atgtagccaa tgtttcctgc ccacactcac ttttttctat agaccattaa
1560
cataatttga cttggaacta atggtttctt tttagggttt cttatttatt tctttacaaa
1620
tcattccagt tcaaaatata tatcagatta atacactgaa aaaaaa
1666
```

```
<210> 5144
<211> 218
<212> PRT
<213> Homo sapiens
```

```
<400> 5144
Leu Pro Glu Glu Ile Arg Glu Pro Ala Leu Arg Asp Ala Gln Trp Thr
1               5                   10                  15
Phe Glu Ser Ala Val Gln Glu Asn Ile Ser Ile Asn Gly Gln Ala Trp
                20                  25                  30
Gln Glu Ala Ser Asp Asn Cys Phe Met Asp Ser Asp Ile Lys Val Leu
```

```
         35                    40                    45
Glu Asp Gln Phe Asp Glu Ile Ile Val Asp Ile Ala Thr Lys Arg Lys
    50                    55                    60
Gln Tyr Pro Arg Lys Ile Leu Glu Cys Val Ile Lys Thr Ile Lys Ala
65                    70                    75                    80
Lys Gln Glu Ile Leu Lys Gln Tyr His Pro Val Val His Pro Leu Asp
                85                    90                    95
Leu Lys Tyr Asp Pro Asp Pro Ala Pro His Met Glu Asn Leu Lys Cys
                100                   105                   110
Arg Gly Glu Thr Val Ala Lys Glu Ile Ser Glu Ala Met Lys Ser Leu
                115                   120                   125
Pro Ala Leu Ile Glu Gln Gly Glu Gly Phe Ser Gln Val Leu Arg Met
    130                   135                   140
Gln Pro Val Ile His Leu Gln Arg Ile His Gln Glu Val Phe Ser Ser
145                   150                   155                   160
Cys His Arg Lys Pro Asp Ala Lys Pro Glu Asn Phe Ile Thr Gln Ile
                165                   170                   175
Glu Thr Thr Pro Thr Glu Thr Ala Ser Arg Lys Thr Ser Asp Met Val
                180                   185                   190
Leu Lys Arg Lys Gln Thr Lys Asp Cys Pro Gln Arg Lys Trp Tyr Pro
                195                   200                   205
Leu Arg Pro Lys Lys Ile Asn Leu Asp Thr
    210                   215
```

<210> 5145
<211> 1885
<212> DNA
<213> Homo sapiens

<400> 5145
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120
ttgtccaagt tgggctgggt cttggtacac gtggttcggc ccagctccac gtccaagaag
180
tagttcaccc cagctacgat ctgcttgcgg gcgcgcacca cctgcagcgc gcggctgtgg
240
tacatgtcgt tgctggcttt gttgtactcg ccgacggcct cgcctcggta tcgcagcggg
300
tcctctctat ctagctccag cctctcgcct gcgccccact ccccgcgtcc cgcgtcctag
360
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420
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480
cccatggacg ccagcgtgga ggaggaggggt gtgcggcgtg cactggactt tgccgtcggc
540
gagtacaaca aagccggcaa cgacatgtac cacagccgcg cgctgcaggt ggtgcgcgcc
600
cgcaagcagg tgacaatgtg ggcagctcat gaagatcgta gctggggtga actacttctt
660
ggacgtggag ctgggccgaa ccacgtgtac caagacccag cccaacttgg acaactgccc
720
```

```
cttccatgac cagccacatc tgaaaaggaa agcattctgc tctttccaga tctacgctgt
780
gccttggcag ggcacaatga ccttgtcgaa atccacctgt caggacgcct aggggtctgt
840
accgggctgg cctgtgccta tcacctctta tgcacacctc ccaccccctg tattcccacc
900
cctggactgg tggcccctgc cttggggaag gtctccccat gtgcctgcac caggagacag
960
acagagaagg cagcaggcgg cctttgttgc tcagcaaggg gctctgccct ccctccttcc
1020
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1080
gtagcatcgg caaaaaaacc tggcatccgg acaggcatcc aaggccttaa aggagaccag
1140
ggggaacctg ggccctctgg aaaccccggc aaggtgggct acccagggcc cagcggcccc
1200
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1260
gaccagccga ggccagcctt ctccgccatt cggcggaacc ccccaatggg gggcaacgtg
1320
gtcatcttcg acacggtcat caccaaccag gaagaaccgt accagaacca ctccggccga
1380
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1440
atctgcctgt ccatcgtctc ctcctcaagg ggccaggtcc gacgctccct gggcttctgt
1500
gacaccacca acaaggggct cttccaggtg gtgtcagggg gcatggtgct tcagctgcag
1560
cagggtgacc aggtctgggt tgaaaaagac cccaaaaagg gtcacattta ccagggctct
1620
gaggccgaca gcgtcttcag cggcttcctc atcttcccat ctgcctgagc cagggaagga
1680
cccctcccc cacccacctc tctggcttcc atgctccgcc tgtaaaatgg gggcgctatt
1740
gcttcagctg ctgaagggag ggggctggct ctgagagccc caggactggc tgccccgtga
1800
cacatgctct aagaagctcg tttcttagac ctcttcctgg aataaacatc tgtgtctgtg
1860
tctgctgaaa aaaaaaaaaa aaaaa
1885
```

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<210> 5146
<211> 312
<212> PRT
<213> Homo sapiens
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```
<400> 5146
Pro Ala Thr Ser Glu Lys Glu Ser Ile Leu Leu Phe Pro Asp Leu Arg
1               5                   10                  15
Cys Ala Leu Ala Gly His Asn Asp Leu Val Glu Ile His Leu Ser Gly
                20                  25                  30
Arg Leu Gly Val Cys Thr Gly Leu Ala Cys Ala Tyr His Leu Leu Cys
        35                  40                  45
Thr Pro Pro Thr Pro Cys Ile Pro Thr Pro Gly Leu Val Ala Pro Ala
```

```
       50              55              60
Leu Gly Lys Val Ser Pro Cys Ala Cys Thr Arg Arg Gln Thr Glu Lys
65                      70              75              80
Ala Ala Gly Gly Leu Cys Cys Ser Ala Arg Gly Ser Ala Leu Pro Pro
                    85              90              95
Ser Phe Leu Leu Leu Ile Ala Pro Val Cys Gly Ala Tyr Thr Pro Thr
                100             105             110
Ser Cys Asn Lys Ile Val Ala Ser Ala Lys Lys Pro Gly Ile Arg Thr
            115             120             125
Gly Ile Gln Gly Leu Lys Gly Asp Gln Gly Glu Pro Gly Pro Ser Gly
    130             135             140
Asn Pro Gly Lys Val Gly Tyr Pro Gly Pro Ser Gly Pro Leu Gly Ala
145             150             155             160
Arg Gly Ile Pro Gly Ile Lys Gly Thr Lys Gly Ser Pro Gly Asn Ile
                165             170             175
Lys Asp Gln Pro Arg Pro Ala Phe Ser Ala Ile Arg Arg Asn Pro Pro
                180             185             190
Met Gly Gly Asn Val Val Ile Phe Asp Thr Val Ile Thr Asn Gln Glu
            195             200             205
Glu Pro Tyr Gln Asn His Ser Gly Arg Phe Val Cys Thr Val Pro Gly
    210             215             220
Tyr Tyr Tyr Phe Thr Phe Gln Val Leu Ser Gln Trp Glu Ile Cys Leu
225             230             235             240
Ser Ile Val Ser Ser Ser Arg Gly Gln Val Arg Arg Ser Leu Gly Phe
                245             250             255
Cys Asp Thr Thr Asn Lys Gly Leu Phe Gln Val Val Ser Gly Gly Met
            260             265             270
Val Leu Gln Leu Gln Gln Gly Asp Gln Val Trp Val Glu Lys Asp Pro
    275             280             285
Lys Lys Gly His Ile Tyr Gln Gly Ser Glu Ala Asp Ser Val Phe Ser
    290             295             300
Gly Phe Leu Ile Phe Pro Ser Ala
305             310
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<210> 5147
<211> 2943
<212> DNA
<213> Homo sapiens

<400> 5147
nacgcgtcgc tgaaggagcg cttcgccttc ctcttcaact cggagctgct gagcgatgtg
60
cgcttcgtac tgggcaaggg tcgcggcgcc gccgccgctg ggggcccgca gcgcatcccc
120
gcccaccgct tcgtgctggc ggccggcagc gccgtctttg acgccatgtt caacggcggc
180
atggccacca cgtcggccga gatcgagctg ccggacgtgg agcccgcagc cttcctggcg
240
ctgctgagat ttctatattc agatgaagtt caaattggtc cagaaacagt tatgaccact
300
ctttatactg ccaagaaata cgcagtccca gccttggaag cacactgtgt agaatttctc
360
accaaacatc ttagggcaga taatgccttt atgttactta ctcaggctcg attatttgat
420

```
gaacctcagc ttgctagtct ttgtctagat acaatagaca aaagcacaat ggatgcaata
480
agtgcagaag ggtttactga tattgatata gatacactct gtgcagtttt agagagagac
540
acactcagta ttcgagaaag tcgacttttt ggagctgttg tacgctgggc agaagcagaa
600
tgtcagagac aacaattacc tgtgactttt gggaataaac aaaaagttct aggaaaagca
660
ctttccttaa tccggttccc actgatgaca attgaggaat ttgcagcagg tcctgctcaa
720
tctggaattt tgtcagatcg tgaagtggta aacctctttc ttcattttac tgtcaaccct
780
aaaccccgag ttgaatacat tgaccgacca agatgctgtc tcaggggaaa ggaatgctgc
840
atcaatagat tccagcaagt agaaagccgc tggggttaca gtgggacgag tgatcgaatc
900
agattcacag ttaatagaag gatctctata gttggatttg cttgtatgg atctattcat
960
ggccctacag attatcaagt gaatatacag atcattgaat atgagaaaaa gcaaaccctg
1020
ggacagaatg ataccggctt tagttgtgat gggacagcta acacattcag ggtcatgttc
1080
aaggaaccca tagagatcct gcccaatgtg tgctacacag catgtgcaac actcaaaggt
1140
ccagattccc actatggcac aaaaggattg aagaaagtag tgcatgagac acctgctgca
1200
agcaagactg tttttttctt ttttagttcc cctggcaata ataatggcac ttcaatagaa
1260
gatggacaaa ttccagaaat catattttat acataattta gcattataat acatcttggc
1320
taaataatac catacaatct agtgtcaaaa acataaatgg ccacaaaaaa gtagtttgag
1380
tgttatgaat atttaaaatt gtaagataag aaacagtttc ttagagcaga tagaaaaatg
1440
cttatttaaa tctttgcatg atttaaaaac agattttcca ttttcttaca actttaagag
1500
aaaagaactg ggtttaatgg tttaaaaaaa agcacagctt tttcaccttc atcttgtata
1560
atttcataga ttggctgact tagggtcttt caatagtttg ggaattgaaa gattcttgtt
1620
atatatagct agtttgggtt tgttttttgtt ttaactattt tgaaggttag gtgagatggg
1680
caaataggct taactatttt gaaggttgga tgaaaagaga tgggtcagta ttcctacaga
1740
attcttatta actcaaataa ctaaatttca gaaaattaag aagctgactt tatatttggt
1800
ggtttgaagt atcttgttgt tagcatttgt aataatgcta aaaaggcct aataaaatgc
1860
ccaagaaaat attcagtgca tttatagaga aggatatttt gtagtagtat agtaatgtgt
1920
tatgtagtac agttttaaag ctataaatgg aattttgtgt aaattcacaa aaatgtgata
1980
taaacaggat ctaagactgg attccctgtc actaaactgc accactatac ctgtctctct
2040
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gtgtgggggga cactgctgat gattcccaag attgagatga tgacggtgat gacgactggg
2100
tgaacagcca tcacttcaac attgtgataa tccttcacag cagaaaccga ataaaatact
2160
aacatttcta acaactgctc tgacattgta aagagatcca acagaatcac tcctgctgaa
2220
aaatacgctt tctgccacct acacatttct atttaggaag taaaatttgc ttcatggtca
2280
tgaccccatt agtcagtgtt acagctgtgt tggggatagg aagtatatct ggcagattga
2340
tatttataca ctttttttata aagcagattt taaaatatag taacatccat ttttttccct
2400
tgaaagtgat tctcttataa aaaatgaaag tggagtttaa ggtatatcaa atcgttgtgg
2460
aaggtgatta aaaatcaaaa ttcttttaaa tatcaactta attttttcta agtaagatac
2520
aaaaaatttt catctaaagt aatatttcac tttatattgt aaagaaggta ggtatattgg
2580
tggctgaggt ctcttgaaat tgctaaaggg aaattttttct atggtaatgc tcttacggat
2640
ataaacctca gttaaatgga attatctatg ggatgtgtgg ttctggttaa ctaaaaatta
2700
accagtaaac actctgtagt aaccattaca gaaaatactt ctgccttaaa aaatatgata
2760
tgccagagat gagttagtgt ttcttgacgt tggagacctt ttaaatgcct catctgttgt
2820
actgaacaat tgaaactgca tgcagccata aaagggacaa gaaacagaac tgtttactaa
2880
ctttgggaca tccctggag tttttaaaaa taaataaata tatatatata taaaaaaaaa
2940
aaa
2943
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<210> 5148
<211> 296
<212> PRT
<213> Homo sapiens

<400> 5148

```
Ala Arg Leu Phe Asp Glu Pro Gln Leu Ala Ser Leu Cys Leu Asp Thr
1               5                   10                  15
Ile Asp Lys Ser Thr Met Asp Ala Ile Ser Ala Glu Gly Phe Thr Asp
                20                  25                  30
Ile Asp Ile Asp Thr Leu Cys Ala Val Leu Glu Arg Asp Thr Leu Ser
            35                  40                  45
Ile Arg Glu Ser Arg Leu Phe Gly Ala Val Val Arg Trp Ala Glu Ala
        50                  55                  60
Glu Cys Gln Arg Gln Gln Leu Pro Val Thr Phe Gly Asn Lys Gln Lys
65                  70                  75                  80
Val Leu Gly Lys Ala Leu Ser Leu Ile Arg Phe Pro Leu Met Thr Ile
                85                  90                  95
Glu Glu Phe Ala Ala Gly Pro Ala Gln Ser Gly Ile Leu Ser Asp Arg
                100                 105                 110
Glu Val Val Asn Leu Phe Leu His Phe Thr Val Asn Pro Lys Pro Arg
```

```
             115                    120                   125
Val Glu Tyr Ile Asp Arg Pro Arg Cys Cys Leu Arg Gly Lys Glu Cys
         130                   135                   140
Cys Ile Asn Arg Phe Gln Gln Val Glu Ser Arg Trp Gly Tyr Ser Gly
145                   150                   155                   160
Thr Ser Asp Arg Ile Arg Phe Thr Val Asn Arg Arg Ile Ser Ile Val
                 165                   170                  ·175
Gly Phe Gly Leu Tyr Gly Ser Ile His Gly Pro Thr Asp Tyr Gln Val
             180                   185                   190
Asn Ile Gln Ile Ile Glu Tyr Glu Lys Lys Gln Thr Leu Gly Gln Asn
             195                   200                   205
Asp Thr Gly Phe Ser Cys Asp Gly Thr Ala Asn Thr Phe Arg Val Met
         210                   215                   220
Phe Lys Glu Pro Ile Glu Ile Leu Pro Asn Val Cys Tyr Thr Ala Cys
225                   230                   235                   240
Ala Thr Leu Lys Gly Pro Asp Ser His Tyr Gly Thr Lys Gly Leu Lys
                 245                   250                   255
Lys Val Val His Glu Thr Pro Ala Ala Ser Lys Thr Val Phe Phe Phe
             260        .          265                   270
Phe Ser Ser Pro Gly Asn Asn Asn· Gly ·Thr Ser Ile Glu Asp Gly Gln
         275                   280 ·                  285
Ile Pro Glu Ile Ile Phe Tyr Thr
    290                   295
```

<210> 5149
<211> 533
<212> DNA
<213> Homo sapiens

<400> 5149
ntccggatgg cagttatggc tatggggatc aaagatgacc gtcttaacaa agaccgatgt
60
gtacgcctag ccctggttca tgatatggca gaatgcatcg ttggggacat agcaccagca
120
gataacatcc ccaaagaaga aaaacatagg cgagaagagg aagctatgaa gcagataacc
180
cagctcctac cagaggacct cagaaaggag ctctatgaac tttgggaaga gtacgagacc
240
caatctagtg cagaagccaa atttgtgaag cagctagacc aatgtgaaat gattcttcaa
300
gcatctgaat atgaagacct tgaacacaaa cctgggagac tgcaagactt ctatgattcc
360
acagcaggaa aattcaatca ccctgagata gtccagcttg ttctgaact tgaggcagaa
420
agaagcacta acatagctgc agctgccagt gagccacact cctgagacac tctctaaatt
480
gctgcactcc tgtaacaaac attattttcc atttcattgt attgtgtttt gca
533

<210> 5150
<211> 154
<212> PRT
<213> Homo sapiens

<400> 5150
Xaa Arg Met Ala Val Met Ala Met Gly Ile Lys Asp Asp Arg Leu Asn
1   5   10   15
Lys Asp Arg Cys Val Arg Leu Ala Leu Val His Asp Met Ala Glu Cys
            20   25   30
Ile Val Gly Asp Ile Ala Pro Ala Asp Asn Ile Pro Lys Glu Glu Lys
        35   40   45
His Arg Arg Glu Glu Glu Ala Met Lys Gln Ile Thr Gln Leu Leu Pro
    50   55   60
Glu Asp Leu Arg Lys Glu Leu Tyr Glu Leu Trp Glu Glu Tyr Glu Thr
65   70   75   80
Gln Ser Ser Ala Glu Ala Lys Phe Val Lys Gln Leu Asp Gln Cys Glu
                85   90   95
Met Ile Leu Gln Ala Ser Glu Tyr Glu Asp Leu Glu His Lys Pro Gly
            100   105   110
Arg Leu Gln Asp Phe Tyr Asp Ser Thr Ala Gly Lys Phe Asn His Pro
        115   120   125
Glu Ile Val Gln Leu Val Ser Glu Leu Glu Ala Glu Arg Ser Thr Asn
    130   135   140
Ile Ala Ala Ala Ala Ser Glu Pro His Ser
145   150

<210> 5151
<211> 2273
<212> DNA
<213> Homo sapiens

<400> 5151
nggtagtggn agatgtccgg ccggtctaag cgggagtctc gcggttccac tcgcgggaag
60
cgagagtctg agtcgcgggg cagctccggt cgcgtcaagc gggagcgaga tcgggagcgg
120
gagcctgagg cggcgagctc ccggggcagc cctgtgcgcg tgaagcggga gttcgagccg
180
gcgagcgcgc gcgaggcccc ggcttctgtt gtcccgtttg tgcgggtgaa gcgggagcgc
240
gaggtcgatg aggactcgga gcctgagcgg gaggtgcgag caaagaatgg ccgagtggat
300
tctgaggacc ggaggagccg ccactgcctg tacctggaca ccattaacag gagtgtgctg
360
gactttgact ttgagaaact gtgttctatc tccctctcac acatcaatgc ttatgcctgt
420
ctggtgtgtg gcaagtactt tcaagctttt cacccttccc tacaggccgg ggtttgaagt
480
ctcacgccta cattcacagt gtccagttta gccaccatgt tttcctcaac ctccacaccc
540
tcaagtttta ctgccttcca gacaactatg agatcatcga ttcctcattg gaggatatca
600
cgtatgtgtt tgaagcccac tttcacaaag cagcaaattg caaacttgga caagcaagcc
660
aaattgtccc gggcatatga tggtaccact tacctgccgg gtattgtggg actgaataac
720
ataaaggcca atgattatgc caacgctgtc cttcaggctc tatctaatgt tcctcctctc
780

```
cggaactact ttctggaaga agacaattat aagaacatca aacgtcctcc aggggatatc
840
atgttcttgt tggtccagcg ttttggagag ctgatgagaa agctctggaa ccctcgaaat
900
ttcaaggcac atgtgtctcc ccatgagatg cttcaggcag ttgtactttg cagtaagaag
960
acttttcaga tcaccaaaca aggagatggc gttgactttc tgtcttggtt tctgaatgct
1020
ctgcactcag ctctgggggg cacaaagaag aaaaagaaga ctattgtgac tgatgttttc
1080
cagggtccca tgaggatctt cactaaaaag cttccccatc ctgatctgcc agcagaagaa
1140
aaagagcagt tgctccataa tgacgagtac caggagacaa tggtggagtc cacttttatg
1200
tacctgacgc tggaccttcc tactgccccc ctctacaagg acgagaagga gcagctcatc
1260
attccccaag tgccactctt caacatcctg gctaagttca atggcatcac tgagaaggaa
1320
tataagactt acaaggagaa ctttctgaag cgcttccagc ttaccaagtt gcctccatat
1380
ctaatctttt gtatcaagat attcactaag aacaacttct tgttgagaa gaatccaact
1440
agttgtcaat ttccctatta caaatgtgga tctgagagaa tacttgtctg aagaagtaca
1500
agcagtacac aagaatacca cctatgacct cattgccaac atcgtgcatg acggcaagcc
1560
ctccgagggc tcctaccgga tccacgtgct tcatcatggg acaggcaaat ggtatgaatt
1620
acaagacctc caggtgactg acatccttcc ccagatgatc acactgtcag aggcttacat
1680
tcagatttgg aagaggcgag ataatgatga aaccaaccag cagggggctt gaaggaggcg
1740
tctagggctt tgctcccaag ggctgtggct gatgatggta ataagaaca cagaagctgt
1800
agctgaacac aggctggctg gtgggcttcc taggccagcc cagcttgtat gggttctggc
1860
tacaccagag caccaagagc ccacttgcct gggatggccc cacactgtca ctcagttgtt
1920
ctttgatcat tttttctag attgatgctc ctttctccca tgcattgagc tcccatctag
1980
cttcagcagg gcagaaccct tctccagatg tgtgtaactt atgtcttgag tatctgggag
2040
tagttgaaga acagataatt ccttccaaac atcaagcctt gggattcttg gagcaagcag
2100
aaagccagta acttcgctct gttagaggtg gaggattttc ctatggttcc ccccatttcc
2160
tgatttgtat ttttagatgg attaaatagt ctcctgtttt taaaaaaaaa aaaaaaaaa
2220
aaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaa
2273
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<210> 5152
<211> 324
<212> PRT

<213> Homo sapiens

<400> 5152
Met Phe Ser Ser Thr Ser Thr Pro Ser Ser Phe Thr Ala Phe Gln Thr
1   5   10   15
Thr Met Arg Ser Ser Ile Pro His Trp Arg Ile Ser Arg Met Cys Leu
            20   25   30
Lys Pro Thr Phe Thr Lys Gln Gln Ile Ala Asn Leu Asp Lys Gln Ala
        35   40   45
Lys Leu Ser Arg Ala Tyr Asp Gly Thr Thr Tyr Leu Pro Gly Ile Val
    50   55   60
Gly Leu Asn Asn Ile Lys Ala Asn Asp Tyr Ala Asn Ala Val Leu Gln
65   70   75   80
Ala Leu Ser Asn Val Pro Pro Leu Arg Asn Tyr Phe Leu Glu Glu Asp
            85   90   95
Asn Tyr Lys Asn Ile Lys Arg Pro Pro Gly Asp Ile Met Phe Leu Leu
        100   105   110
Val Gln Arg Phe Gly Glu Leu Met Arg Lys Leu Trp Asn Pro Arg Asn
        115   120   125
Phe Lys Ala His Val Ser Pro His Glu Met Leu Gln Ala Val Val Leu
    130   135   140
Cys Ser Lys Lys Thr Phe Gln Ile Thr Lys Gln Gly Asp Gly Val Asp
145   150   155   160
Phe Leu Ser Trp Phe Leu Asn Ala Leu His Ser Ala Leu Gly Gly Thr
            165   170   175
Lys Lys Lys Lys Lys Thr Ile Val Thr Asp Val Phe Gln Gly Ser Met
        180   185   190
Arg Ile Phe Thr Lys Lys Leu Pro His Pro Asp Leu Pro Ala Glu Glu
    195   200   205
Lys Glu Gln Leu Leu His Asn Asp Glu Tyr Gln Glu Thr Met Val Glu
    210   215   220
Ser Thr Phe Met Tyr Leu Thr Leu Asp Leu Pro Thr Ala Pro Leu Tyr
225   230   235   240
Lys Asp Glu Lys Glu Gln Leu Ile Ile Pro Gln Val Pro Leu Phe Asn
            245   250   255
Ile Leu Ala Lys Phe Asn Gly Ile Thr Glu Lys Glu Tyr Lys Thr Tyr
        260   265   270
Lys Glu Asn Phe Leu Lys Arg Phe Gln Leu Thr Lys Leu Pro Pro Tyr
        275   280   285
Leu Ile Phe Cys Ile Lys Ile Phe Thr Lys Asn Asn Phe Phe Val Glu
    290   295   300
Lys Asn Pro Thr Ser Cys Gln Phe Pro Tyr Tyr Lys Cys Gly Ser Glu
305   310   315   320
Arg Ile Leu Val

<210> 5153
<211> 640
<212> DNA
<213> Homo sapiens

<400> 5153
nngctagcag gagaggagga ggtagatctc attgtacaca tccgtcttct ggagagaaca
60

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acctctccta ccatcccttc cttctacacc ttctctgcct gtcataggtg gctgcaggag
120
gggtccacgt tgggagggac aggtgagctg gcctttggtg ctgacacact cctgactttg
180
ccctttctcc tgcaggggt gccattcccg cagaatgagg ctaatgccat ggatgtggtg
240
gtccagtttg ccatccaccg cctgggcttc cagccccagg acatcatcat ctacgcctgg
300
tccatcggcg gcttcactgc cacgtgggca gccatgtcct acccagatgt tagtgccatg
360
atcctggatg cctcctttga tgacctggtg cccttggcct tgaaggtcat gccagacagc
420
tggagtgagt gcagctccca ggcctgccct tcctgggaag gggtgggctg gaactgggaa
480
ctgttctgag atggctccct tttcttgggt ggggagtaag tcgccccaat gttggaagca
540
ggaggactcc tttgtctggg ggcctcagtt ttctttctcc gtgaatagtg aggaccttta
600
tgttgggcaa gggctttgtc tctgccatcc cttcacgcgt
640
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<210> 5154
<211> 162
<212> PRT
<213> Homo sapiens

<400> 5154
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Xaa Leu Ala Gly Glu Glu Glu Val Asp Leu Ile Val His Ile Arg Leu
1               5                   10                  15
Leu Glu Arg Thr Thr Ser Pro Thr Ile Pro Ser Phe Tyr Thr Phe Ser
            20                  25                  30
Ala Cys His Arg Trp Leu Gln Glu Gly Ser Thr Leu Gly Gly Thr Gly
        35                  40                  45
Glu Leu Ala Phe Gly Ala Asp Thr Leu Leu Thr Leu Pro Phe Leu Leu
    50                  55                  60
Gln Gly Val Pro Phe Pro Gln Asn Glu Ala Asn Ala Met Asp Val Val
65                  70                  75                  80
Val Gln Phe Ala Ile His Arg Leu Gly Phe Gln Pro Gln Asp Ile Ile
                85                  90                  95
Ile Tyr Ala Trp Ser Ile Gly Gly Phe Thr Ala Thr Trp Ala Ala Met
            100                 105                 110
Ser Tyr Pro Asp Val Ser Ala Met Ile Leu Asp Ala Ser Phe Asp Asp
            115                 120                 125
Leu Val Pro Leu Ala Leu Lys Val Met Pro Asp Ser Trp Ser Glu Cys
    130                 135                 140
Ser Ser Gln Ala Cys Pro Ser Trp Glu Gly Val Gly Trp Asn Trp Glu
145                 150                 155                 160
Leu Phe
```

<210> 5155
<211> 1402
<212> DNA
<213> Homo sapiens

<400> 5155
ccaaagtcca gaagttacgc gtcacccttg ctctacagcc aaacatgcag gactctagta
60
acccgcgaaa tgatgggata gcgttgcaaa tccttaaaag agtcttaacg aaatcctggc
120
tgacattgac ttctccactg caaccatcga gttcattgtc tcctaaacct tgccatggag
180
gcctgtggca cctgagccag ccattatcat caccagcact tccatgagct acaagctgga
240
cccactgcag tcctcctgac acactgaaat cagagcctgc acacagagca gcagatgctt
300
caatgtaaag gtcatttcca ggtccttgac aggcgtgcat ctgggccaga tccatggcaa
360
taaccttcag gttgaggcta gagggcttca gatgggcagc ttcgaatgac aggagcaagg
420
aacaagaggc cggaaaggga gggtgacatt ttcagcatct ataagatcaa ctttagaaat
480
atttgggggt tgacaaattc ccatcaagct ctgtggatct tgtacaacta ctcaccaccg
540
gcttctcatc agcacatgat tggtgcaggg ttctgaggat gattttgaga tgttccctga
600
tgtggtcttg tgaggagatt tcatgacgga tggcaggaaa cttcgtggag agatttctga
660
agacactcct gagctcccaa caccgggcaa ctctcttcca gaggatattg gggtggaggg
720
tagaagagag gcaaagtcag gtttgtcttc ggatcccctt tcattctccc ttttttcccac
780
cgtaaaccaa ctttggctta cagttagaca ccagttttcg gcagatgaaa tccctctgat
840
ttcaggcatt ttgtcaatta agctgctcag caacaatagg ataaacttat gaaaagaaag
900
gagtagcagt cccacagaca aagcatccag cccctgcact gagacagtat agggaaggga
960
cttggtcctg gcagacagga cagataatca acatcctagt gggccttaca catgtgggca
1020
tattctttc cataccttct tgtctgtttt aacaagctaa ccccagtcac agtagcagag
1080
agagggtcca tcctaactta gctgaccagg ctggattcct aatcataaaa ccaaaaaagg
1140
aagaacctaa ccatttctct ctttcagcta tgtgttccaa gattactgaa gcaggattct
1200
ggccttcctg ataagaacat gaccagatcc agctggtttg caacaagatg aacttcagtg
1260
ctgagctttc accagttttt tctcactaca atctcattgt aatactaaaa tctccaccca
1320
agatggaggt tatctgccat tttctgtact ctgctccgtt gtgctgctag agccacaagc
1380
ctattaaact ttgcctgaaa ta
1402

<210> 5156
<211> 118
<212> PRT

<213> Homo sapiens

<400> 5156
Met Asp Leu Ala Gln Met His Ala Cys Gln Gly Pro Gly Asn Asp Leu
1   5   10   15
Tyr Ile Glu Ala Ser Ala Ala Leu Cys Ala Gly Ser Asp Phe Ser Val
            20   25   30
Ser Gly Gly Leu Gln Trp Val Gln Leu Val Ala His Gly Ser Ala Gly
        35   40   45
Asp Asp Asn Gly Trp Leu Arg Cys His Arg Pro Pro Trp Gln Gly Leu
    50   55   60
Gly Asp Asn Glu Leu Asp Gly Cys Ser Gly Glu Val Asn Val Ser Gln
65   70   75   80
Asp Phe Val Lys Thr Leu Leu Arg Ile Cys Asn Ala Ile Pro Ser Phe
                85   90   95
Arg Gly Leu Leu Glu Ser Cys Met Phe Gly Cys Arg Ala Arg Val Thr
        100   105   110
Arg Asn Phe Trp Thr Leu
        115

<210> 5157
<211> 1310
<212> DNA
<213> Homo sapiens

<400> 5157
tgatcagaaa ttacctttga cgtgcagtga cagttgattt cctcttgaac tgccggtgaa
60
aacagtctag tacacaggtg ctgtcagccc agggtgggag caggaaatga ttgctgagcc
120
cggggcaggg gaattgcatc tgcaggaaag agatgcagca tgctcctcac tcctgagtgc
180
ccacctgtcc tgcttctctg caggtgaaaa ctctggggga tgctgatcaa tagagcttgg
240
tcccaagctc tactgggccc ttggaggtag caaggccact gggttgctat cctcttgctg
300
gggatagcaa ccactggttt gcaaccactg ggttgctatc cttttgctat cctcttgctc
360
atgaccagcc atatggtgag gctggggagt tcacatcctc aggcaggaac tagcagttgt
420
ttatccagca atgcctcaag gatgttgcat tgctcccagg agctggctat taggtatgtc
480
ttgtgcggtc agtcagcatc acagacacat agatgctcac cagcctggct tagctgggac
540
ctaaatcttc tggtgaaaag cttttcacta agtgaggttc cttccctgca aatgctgaat
600
ctagcctaat tcgcaaccac acagaatttc atggctttca aaggcttgcc atgtgcccca
660
tctcattcta tactcacatc ccatggaggt gaggattttc acttcttttc tctagacttg
720
gaagctgaga ttcagagagg aagcatccct tgtgcaagat cacatagtca ggaggtgaca
780
cagggctaag acttgaacca aggctctaag aggatttctt cttttcagag tctcttccct
840

```
gtccatttct gtgactaagc tgtgcagagg ttgacagcag ggcaagttat attgatattc
900
atcctttata ggcttcctgc taaaaagctt ctgagattgt ggtcttccaa aaaaaatagg
960
agcttggttg aagtccccac attttcaagc actcagtgtt ctgcctctgc gaactgtgct
1020
aacagctcag tgctgtcctg ggagtcctct gactcagaac cctcgaagca tcctgcattg
1080
tctttaccca ccatcatctt cactaagaga aacatgccta cccatgaagg cgtgtttgat
1140
tactccaggc ttctggacac acatacccat gggtgatttt tgctcctcag gcccaatatt
1200
ctcagacagc ccagcagtgt gaacacacaa tgccaggcca gggaactggg gaccaccatc
1260
ttgctgatgg gaagggaaca acaggtggcc cagggacatg ctcctgcata
1310
```

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<210> 5158
<211> 82
<212> PRT
<213> Homo sapiens
```

```
<400> 5158
Met Thr Ser His Met Val Arg Leu Gly Ser Ser His Pro Gln Ala Gly
 1               5                  10                  15
Thr Ser Ser Cys Leu Ser Ser Asn Ala Ser Arg Met Leu His Cys Ser
            20                  25                  30
Gln Glu Leu Ala Ile Arg Tyr Val Leu Cys Gly Gln Ser Ala Ser Gln
        35                  40                  45
Thr His Arg Cys Ser Pro Ala Trp Leu Ser Trp Asp Leu Asn Leu Leu
    50                  55                  60
Val Lys Ser Phe Ser Leu Ser Glu Val Pro Ser Leu Gln Met Leu Asn
65                  70                  75                  80
Leu Ala
```

```
<210> 5159
<211> 3233
<212> DNA
<213> Homo sapiens
```

```
<400> 5159
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60
ccatttcatc agctttagtt gcatgcagcc atggcacaga gaagggagaa aagaatgtga
120
gcaaaagtga tcagggaaga tttcctgatg gaggggggag tccaaccggg gtcttcttgg
180
atagtagcat ttgagtagtg tttaaaaaat aaataaataa aaggagcacg tgagaagtaa
240
agttgcattt ctggacatga gagcagtgtt gtgaaactta gatgatgcat atagagaagg
300
cagcgagtgt gtttgaggat agtgagcgaa cagtttgtct gttcacggac atctgtccag
360
```

```
agtggcaagc acatagtggg taaccagaat gggcctcttc cctttccttt ttggttaccc
420
cacaactcag tataggtact gactgccaaa tctccacatt tgtatatttc ttagcgtaat
480
gaaggcgatc tcttccaccg gctgtggcac atcatgaatg aaatcctgga cctgaggcgg
540
caggtgctgg tgggccacct cacccacgac cggatgaagg acgtgaagcg ccacattact
600
gcccggcttg actggggcaa tgaacaactg ggactggacc tggtgcctag gaaagagtac
660
gcaatggtgg atccggaaga catcagcatt actgagctct accgattgtc catgctgatc
720
atgttttgt tggggggtgt cattcagatg gaacatcgac atcggaagaa agacaccccg
780
gtgcaggcca gcagtcacca cctctttgtc cagatgaaga gcctcatgtg ttccaacctg
840
ggagaggagc tggaggtcat cttctcactc tttgacagta aagagaaccg gccaatcagt
900
gagagatttt tcttgaggct gaatagaaac gggcttccca agcccctga taaaccggaa
960
cgacattgct ccctctttgt ggatttgggc agcagtgagc taagaaagga catttatatc
1020
accgtgcaca ttatccgaat cggtcgaatg ggagcaggag aaaaaaagaa tgcctgtagt
1080
gtccagtacc gacgaccctt tggctgtgca gttcttagca tcgctgacct gctaacagga
1140
gagacaaagg atgacctcat tctgaaagta tacatgtgta acacagagag tgagtggtac
1200
caaatccatg agaacatcat caaaaagctg aatgcacgtt ataacttgac tggctccaat
1260
gcaggtttag cagtttcctt acagctattg cacggagaca ttgaacaaat cagaagggaa
1320
tattcatcag tattttctca tggagtatcc ataacaagga agctgggatt ttcaaatatt
1380
attatgcctg gtgaaatgag gaatgattta tatatcacta ttgaaagggg agaatttgag
1440
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1500
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1560
cactcctttg tgctttacca taacaacagt cccaggtggt ctgaactgct gaaacttccc
1620
attcctgtgg ataaattccg gggtgcacac atccgcttcg agtttcggca ttgttccaca
1680
aaggagaaag gagagaagaa gttgtttggg ttttcttttg tccctctgat gcaagaagat
1740
ggtaggactc ttccagatgg cactcatgag ctcatcgtgc ataagtgtga agaaaacaca
1800
aatcttcagg atactacccg ctacctcaaa cttccctttt ccaagggcat tttccttggg
1860
aataataatc aagccatgaa ggccacaaag gagtcctttt gtattacatc ttttctctgt
1920
tccacaaaac tcacacaaaa tggtgatatg cttgatcttt tgaaatggag aacccaccca
1980
```

```
gacaagatca ctggctgtct ctctaaatta aaagaaattg atggctcaga gatagtaaag
2040
tttctgcagg atacactgga taccttattt ggaattttag atgaaaattc ccaaaaatat
2100
gggtctaaag tgtttgattc tttggttcac ataataaatt tgctgcaaga tagcaaattt
2160
catcatttta aacctgtaat ggacacttac attgagagtc attttgctgg ggcacttgca
2220
tacagagatc tcatcaaagt gctcaaatgg tacgtggacc ggatcacaga agcagagcgg
2280
caagagcata tccaggaggt gctgaaggca caagaataca tttttaagta tatagttcaa
2340
tctcgaaggc tgttttccct tgccactggt gggcaaaacg aagaggagtt ccgctgctgc
2400
attcaggagc ttctcatgtc agtccgtttc tttctttcgc aagagagcaa agggtctgga
2460
gcattatctc agtcacaggc tgtgtttctg agctctttcc ctgccgtgta ctcagaactg
2520
ttgaagctct ttgatgtccg ggaagtagcc aacttggtcc aggacaccct gggcagtctg
2580
ccgaccatcc tgcatgtgga tgattccctg caggccatca aactgcagtg cattggcaaa
2640
accgtggaaa gccagcttta taccaaccca gattcccgat acattcttct gcctgtcgtg
2700
ttacatcacc tccacattca cttgcaagaa cagaaggacc tgatcatgtg tgcacgtatc
2760
cttagcaacg tattttgtct tatcaagaaa aatagctcag aaaaatctgt gctggaggaa
2820
atagatgtga tagtggccag cttgctggat attctgctga ggaccatatt ggagatcacc
2880
agccgacctc agccatccag ctcagcaatg cggttccagt tccaggatgt cactggggag
2940
tttgttgctt gtctcctgtc cctattacga caaatgacag atagacatta tcaacagctt
3000
cttgatagtt ttaatacaaa ggaagaacta agggtaagtg acattttaaa atgttttctt
3060
taacatatct tttgggttta tcttgttttt attcatcact gttgagataa atcctagaca
3120
attgctttac ctgtttccat taagttctaa gctgtttttc tcagcctcat ccacagatct
3180
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3233
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```
<210> 5160
<211> 849
<212> PRT
<213> Homo sapiens

<400> 5160
Met Asn Glu Ile Leu Asp Leu Arg Arg Gln Val Leu Val Gly His Leu
1               5                   10                  15
Thr His Asp Arg Met Lys Asp Val Lys Arg His Ile Thr Ala Arg Leu
                20                  25                  30
Asp Trp Gly Asn Glu Gln Leu Gly Leu Asp Leu Val Pro Arg Lys Glu
```

```
           35                    40                    45
Tyr Ala Met Val Asp Pro Glu Asp Ile Ser Ile Thr Glu Leu Tyr Arg
        50                    55                    60
Leu Ser Met Leu Ile Met Phe Leu Leu Gly Gly Val Ile Gln Met Glu
65                    70                    75                    80
His Arg His Arg Lys Lys Asp Thr Pro Val Gln Ala Ser Ser His His
                85                    90                    95
Leu Phe Val Gln Met Lys Ser Leu Met Cys Ser Asn Leu Gly Glu Glu
                100                   105                   110
Leu Glu Val Ile Phe Ser Leu Phe Asp Ser Lys Glu Asn Arg Pro Ile
            115                   120                   125
Ser Glu Arg Phe Phe Leu Arg Leu Asn Arg Asn Gly Leu Pro Lys Ala
        130                   135                   140
Pro Asp Lys Pro Glu Arg His Cys Ser Leu Phe Val Asp Leu Gly Ser
145                   150                   155                   160
Ser Glu Leu Arg Lys Asp Ile Tyr Ile Thr Val His Ile Ile Arg Ile
                165                   170                   175
Gly Arg Met Gly Ala Gly Glu Lys Lys Asn Ala Cys Ser Val Gln Tyr
            180                   185                   190
Arg Arg Pro Phe Gly Cys Ala Val Leu Ser Ile Ala Asp Leu Leu Thr
            195                   200                   205
Gly Glu Thr Lys Asp Asp Leu Ile Leu Lys Val Tyr Met Cys Asn Thr
    210                   215                   220
Glu Ser Glu Trp Tyr Gln Ile His Glu Asn Ile Ile Lys Lys Leu Asn
225                   230                   235                   240
Ala Arg Tyr Asn Leu Thr Gly Ser Asn Ala Gly Leu Ala Val Ser Leu
                245                   250                   255
Gln Leu Leu His Gly Asp Ile Glu Gln Ile Arg Arg Glu Tyr Ser Ser
                260                   265                   270
Val Phe Ser His Gly Val Ser Ile Thr Arg Lys Leu Gly Phe Ser Asn
    275                   280                   285
Ile Ile Met Pro Gly Glu Met Arg Asn Asp Leu Tyr Ile Thr Ile Glu
    290                   295                   300
Arg Gly Glu Phe Glu Lys Gly Gly Lys Ser Val Ala Arg Asn Val Glu
305                   310                   315                   320
Val Thr Met Phe Ile Val Asp Ser Ser Gly Gln Thr Leu Lys Asp Phe
                325                   330                   335
Ile Ser Phe Gly Ser Gly Glu Pro Pro Ala Ser Glu Tyr His Ser Phe
                340                   345                   350
Val Leu Tyr His Asn Asn Ser Pro Arg Trp Ser Glu Leu Leu Lys Leu
            355                   360                   365
Pro Ile Pro Val Asp Lys Phe Arg Gly Ala His Ile Arg Phe Glu Phe
    370                   375                   380
Arg His Cys Ser Thr Lys Glu Lys Gly Glu Lys Lys Leu Phe Gly Phe
385                   390                   395                   400
Ser Phe Val Pro Leu Met Gln Glu Asp Gly Arg Thr Leu Pro Asp Gly
                405                   410                   415
Thr His Glu Leu Ile Val His Lys Cys Glu Glu Asn Thr Asn Leu Gln
                420                   425                   430
Asp Thr Thr Arg Tyr Leu Lys Leu Pro Phe Ser Lys Gly Ile Phe Leu
        435                   440                   445
Gly Asn Asn Asn Gln Ala Met Lys Ala Thr Lys Glu Ser Phe Cys Ile
    450                   455                   460
Thr Ser Phe Leu Cys Ser Thr Lys Leu Thr Gln Asn Gly Asp Met Leu
```

```
465                    470                 475                      480
Asp Leu Leu Lys Trp Arg Thr His Pro Asp Lys Ile Thr Gly Cys Leu
                485                 490                 495
Ser Lys Leu Lys Glu Ile Asp Gly Ser Glu Ile Val Lys Phe Leu Gln
            500                 505                 510
Asp Thr Leu Asp Thr Leu Phe Gly Ile Leu Asp Glu Asn Ser Gln Lys
        515                 520                 525
Tyr Gly Ser Lys Val Phe Asp Ser Leu Val His Ile Ile Asn Leu Leu
        530                 535                 540
Gln Asp Ser Lys Phe His His Phe Lys Pro Val Met Asp Thr Tyr Ile
545                 550                 555                      560
Glu Ser His Phe Ala Gly Ala Leu Ala Tyr Arg Asp Leu Ile Lys Val
                565                 570                 575
Leu Lys Trp Tyr Val Asp Arg Ile Thr Glu Ala Glu Arg Gln Glu His
                580                 585                 590
Ile Gln Glu Val Leu Lys Ala Gln Glu Tyr Ile Phe Lys Tyr Ile Val
                595                 600                 605
Gln Ser Arg Arg Leu Phe Ser Leu Ala Thr Gly Gly Gln Asn Glu Glu
            610                 615                 620
Glu Phe Arg Cys Cys Ile Gln Glu Leu Leu Met Ser Val Arg Phe Phe
625                 630                 635                      640
Leu Ser Gln Glu Ser Lys Gly Ser Gly Ala Leu Ser Gln Ser Gln Ala
                645                 650                 655
Val Phe Leu Ser Ser Phe Pro Ala Val Tyr Ser Glu Leu Leu Lys Leu
                660                 665                 670
Phe Asp Val Arg Glu Val Ala Asn Leu Val Gln Asp Thr Leu Gly Ser
                675                 680                 685
Leu Pro Thr Ile Leu His Val Asp Asp Ser Leu Gln Ala Ile Lys Leu
            690                 695                 700
Gln Cys Ile Gly Lys Thr Val Glu Ser Gln Leu Tyr Thr Asn Pro Asp
705                 710                 715                      720
Ser Arg Tyr Ile Leu Leu Pro Val Val Leu His His Leu His Ile His
                725                 730                 735
Leu Gln Glu Gln Lys Asp Leu Ile Met Cys Ala Arg Ile Leu Ser Asn
                740                 745                 750
Val Phe Cys Leu Ile Lys Lys Asn Ser Ser Glu Lys Ser Val Leu Glu
            755                 760                 765
Glu Ile Asp Val Ile Val Ala Ser Leu Leu Asp Ile Leu Leu Arg Thr
        770                 775                 780
Ile Leu Glu Ile Thr Ser Arg Pro Gln Pro Ser Ser Ser Ala Met Arg
785                 790                 795                      800
Phe Gln Phe Gln Asp Val Thr Gly Glu Phe Val Ala Cys Leu Leu Ser
                805                 810                 815
Leu Leu Arg Gln Met Thr Asp Arg His Tyr Gln Gln Leu Leu Asp Ser
            820                 825                 830
Phe Asn Thr Lys Glu Glu Leu Arg Val Ser Asp Ile Leu Lys Cys Phe
            835                 840                 845
Leu
```

<210> 5161
<211> 1645
<212> DNA
<213> Homo sapiens

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<400> 5161
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aaagggagag caaaagcagc cgggagcgcg cgggccgacc tggttctcct cccttcccac
120
ggctgcctta gtacagaatc ttataagtcc tcctccctca gaggctacag atggtgttcc
180
gaggccaggg gagtttaaag ctcgatttca cccgcgcagc ctccaatccg ggtgttctga
240
gaatcagcca tgtcatccct gtacccatct ctagaggacc taaaagtgga ccaagccatt
300
caggcccagg tcagagcctc acccaagatg ccagccctgc cagtccaggc aacagccatt
360
tccccaccac cagttttgta cccaaacttg gcagaactgg aaaattatat gggtctttcc
420
ctctccagcc aagaagtcca ggagagcctg cttcagattc cagagggtga cagtacagcg
480
gtctcgggcc ccgggcccgg ccagatggtg gcaccggtaa ccgggtacag cctgggcgtg
540
cggcgagctg agatcaagcc cggggtgcgc gagatccacc tgtgcaagga cgagcgcggc
600
aagaccgggc tgaggctgcg gaaggtcgac caggggctct_ttgtgcagtt ggtccaggcc
660
aacacccctg catcccttgt ggggctgcgc tttggggacc agctcctgca gattgacggg
720
cgtgactgtg ctgggtggag ctcgcacaaa gcccatcagg tggtgaagaa ggcatcaggc
780
gataagattg tcgtggtggt tcgggacagg ccgttccagc ggactgtcac catgcacaag
840
gacagcatgg gccacgtcgg cttcgtgatc aagaagggga agattgtctc tctggtcaaa
900
gggagttctg cggcctgcaa cgggctcctc accaaccact acgtgtgtga ggtggacggg
960
cagaatgtta tcgggctgaa ggacaaaaag atcatggaga ttctggccac ggctgggaac
1020
gttgtcaccc tgaccatcat ccccagtgtg atctacgagc acatggtcaa aaagttgcct
1080
ccagtcctgc tccaccacac catggaccac tccatcccag atgcctgaag ccactggagg
1140
gcagggcagg caggggggggc ttcccgccct cctgcagcaa agggcaacca ccctcggatg
1200
atgggttgca gccggcctgc tgcttaaggt ggggggctgcc atgagggggg cgtgtccagg
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1320
ggctgaggct caggcagggc ccacaggcag ccgattctct tgtgctgatt taaatgctgg
1380
acacggaggc aggctgttta aacgctgctt aaagtcgcaa ctgggcccct ttcaagaaat
1440
tttgctctac caggaaaaca gttacacatt ttaagagaac agagctacgt tctttgtgag
1500
agctttttcc ttggcttgac ttgctctttg tcacagactg cataagttgt cagccttgac
1560
```

tatcttttga ataaagattt gattttaaac aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa
1620
aaaaaaaaaa aaaaaaaaaa aaaaa
1645

<210> 5162
<211> 207
<212> PRT
<213> Homo sapiens

<400> 5162
Met Val Ala Pro Val Thr Gly Tyr Ser Leu Gly Val Arg Arg Ala Glu
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Ile Lys Pro Gly Val Arg Glu Ile His Leu Cys Lys Asp Glu Arg Gly
            20   25   30
Lys Thr Gly Leu Arg Leu Arg Lys Val Asp Gln Gly Leu Phe Val Gln
        35   40   45
Leu Val Gln Ala Asn Thr Pro Ala Ser Leu Val Gly Leu Arg Phe Gly
    50   55   60
Asp Gln Leu Leu Gln Ile Asp Gly Arg Asp Cys Ala Gly Trp Ser Ser
65   70   75   80
His Lys Ala His Gln Val Val Lys Lys Ala Ser Gly Asp Lys Ile Val
            85   90   95
Val Val Val Arg Asp Arg Pro Phe Gln Arg Thr Val Thr Met His Lys
            100   105   110
Asp Ser Met Gly His Val Gly Phe Val Ile Lys Lys Gly Lys Ile Val
            115   120   125
Ser Leu Val Lys Gly Ser Ser Ala Ala Cys Asn Gly Leu Leu Thr Asn
    130   135   140
His Tyr Val Cys Glu Val Asp Gly Gln Asn Val Ile Gly Leu Lys Asp
145   150   155   160
Lys Lys Ile Met Glu Ile Leu Ala Thr Ala Gly Asn Val Val Thr Leu
            165   170   175
Thr Ile Ile Pro Ser Val Ile Tyr Glu His Met Val Lys Lys Leu Pro
            180   185   190
Pro Val Leu Leu His His Thr Met Asp His Ser Ile Pro Asp Ala
        195   200   205

<210> 5163
<211> 1187
<212> DNA
<213> Homo sapiens

<400> 5163
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tgttctggct gaaggcgccg gccgctcaag cgtgtttcgg cagatatttt tgagaacatt
120
tttttatttt taaatacatg tatagcatga gtgatggagc caaacacaag ttttgaagcc
180
aagctcttgg ttctgagaaa caggcccaac actgcacagt gtcattcgca gtcaacccaa
240
ccactgtctg agttcacgtg acgatttctc ctgccaggtc acgggaagtt gttatttaaa
300

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gatggcagtt attacgaagg ggcgtttgtg gacggagaga tcacgggaga aggccgccgg
360
cactgggcct ggtcaggaga caccttctct ggacagtttg ttctgggaga gcctcaaggc
420
tacggcgtca tggagtacaa agccggcgga tgttatgaag gggaggtctc ccacggcatg
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540
gacaacaaga ggcacggccc tgggcagatg ctctttcaga acggtgacaa gtacgacggc
600
gactgggtcc gggaccggcg tcagggacac ggggtgctgc gctgcgccga cggctccacc
660
tacaagggac agtggcacag cgacgtcttc agtggactgg gcagcatggc ccactgctca
720
ggggtcacct attatgggtt gtggatcaat ggccacccag cagaacaagc tacgaggatc
780
gtgatcttgg gtccggaggt gatggaagtg gcccaagggt ctcccttctc ggtgaacgtt
840
cagctgctgc aggaccacgg ggaaattgcc aagagtaagc atctccaggg ggagatgacc
900
taacgtttcc aaaagagaaa caggcagcag gttcttaagc agtgaagatg cggacgagat
960
gttgcatgtg gctcctgagg cacagcagtg acttcgtgcc cagagcctgg cagagaggtc
1020
gcaggtgtgc cagcttccct gccagtcagg gcagccttgg gtgtgtgtgc aagcatgtgt
1080
gcacatattg tgtgatgtgc gtgctcctgt atgtgtgtgc atatgtgtgt atgccttgca
1140
caggtgtgca caggtctgaa tgtgtatacg tgtggggggg cacgcgt
1187
```

```
<210> 5164
<211> 213
<212> PRT
<213> Homo sapiens
```

```
<400> 5164
Arg Phe Leu Leu Pro Gly His Gly Lys Leu Leu Phe Lys Asp Gly Ser
 1               5                  10                  15
Tyr Tyr Glu Gly Ala Phe Val Asp Gly Glu Ile Thr Gly Glu Gly Arg
             20                  25                  30
Arg His Trp Ala Trp Ser Gly Asp Thr Phe Ser Gly Gln Phe Val Leu
         35                  40                  45
Gly Glu Pro Gln Gly Tyr Gly Val Met Glu Tyr Lys Ala Gly Gly Cys
     50                  55                  60
Tyr Glu Gly Glu Val Ser His Gly Met Arg Glu Gly His Gly Phe Leu
 65                  70                  75                  80
Val Asp Arg Asp Gly Gln Val Tyr Gln Gly Ser Phe His Asp Asn Lys
             85                  90                  95
Arg His Gly Pro Gly Gln Met Leu Phe Gln Asn Gly Asp Lys Tyr Asp
            100                 105                 110
Gly Asp Trp Val Arg Asp Arg Arg Gln Gly His Gly Val Leu Arg Cys
        115                 120                 125
Ala Asp Gly Ser Thr Tyr Lys Gly Gln Trp His Ser Asp Val Phe Ser
```

```
          130                      135                     140
Gly Leu Gly Ser Met Ala His Cys Ser Gly Val Thr Tyr Tyr Gly Leu
145                     150                     155                     160
Trp Ile Asn Gly His Pro Ala Glu Gln Ala Thr Arg Ile Val Ile Leu
                    165                     170                     175
Gly Pro Glu Val Met Glu Val Ala Gln Gly Ser Pro Phe Ser Val Asn
                    180                     185                     190
Val Gln Leu Leu Gln Asp His Gly Glu Ile Ala Lys Ser Lys His Leu
                195                     200                     205
Gln Gly Glu Met Thr
        210
```

<210> 5165
<211> 2370
<212> DNA
<213> Homo sapiens

<400> 5165

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120
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180
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240
gtgcgcaggt gcctgcagca acagtgtgaa cagactgtgc ggatcctgca tgccaaggtg
300
gcccagaaat catacggaaa tgagaagcgg ttcttctgcc ccccgccctg tgtctacctc
360
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420
gggcccacgg tctgcggtta catgggactg gacagcgcgt ccggcagcgc cactgagacg
480
cagaagctga atttcgagca gcagccggac tccagggaat tcggctgcgc caagaccctg
540
tacatctcag atgcagacaa gaggaagcac tttcggctgg tgctgcggct ggtgctgcgc
600
gggggccggg agctgggtac cttccacagc cgccttatca aggtcatctc gaagccctcg
660
cagaagaagc agtcgctgaa aaacaccgat ctgtgcatat cctccggctc aaaggtctcc
720
ctcttcaacc gcctgcgctc tcagacggtc tccacacgct acctctctgt ggaggatggg
780
gcctttgtgg ccagtgcacg acagtgggct gccttcacgc tccacctggc tgatgggcac
840
tctgcccaag gagacttccc accgcgagag ggctacgttc gctatggctc cctggtgcag
900
ctcgtctgca cggtcaccgg catcacacta cctcccatga tcatccgtaa agtagcaaaa
960
cagtgtgcgc tccttgatgt ggatgagccc atctcccagc tgcacaagtg tgcattccag
1020
tttccaggca gtccccagg aggggtggc acctactat gccttgccac agagaaggtg
1080
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gtgcaatttc aggcctctcc ctgccccaag gaggcgaaca gggctctgct taacgacagc
1140
tcttgctgga ccatcatcgg caccgagtcg gtggaatttt ccttcagcac cagcctggcg
1200
tgtaccctgg agccggtcac tccggtgcct ctcatcagca ccctagagct gagcggcggg
1260
ggcgacgtgg ccacgctgga gctccacgga gagaacttcc acgcggggct caaggtgtgg
1320
tttggggacg tggaggcaga aaccatgtac aggtacgggg tgnngagccc gcggtccctg
1380
gtgtgcgtgg tgccggacgt ggcggccttc tgcagcgact ggcgctggct gcgcgctccc
1440
atcacaatcc ccatgagcct ggtgcgcgcc gacgggctct tctaccctag tgccttctcc
1500
ttcacctaca ccccggaata cagcgtgcgg ccgggtcacc ccggcgtccc cgagcccgcc
1560
accgacgccg acgcgctcct ggagagcatc catcaggagt tcacgcgcac caacttccac
1620
ctcttcatcc agacttaggc gcgcccggta gccccggctg cccaccctgg agggctgcgc
1680
ccgcgccagg cgcggggacg tgtttctggg ttctaggccc tgcttccttg ccccttttgct
1740
gcagaagggc agctgaaggc tcaccctaga aaccgggcct ggtgggtctt acccggctca
1800
ctccctccct tgtccttaca catacaggaa gacaagacct gagtggtgct gtctttgtgt
1860
ccgtcgtgta tggctctccc tgtcttcatt tcttctcact ctgtctctaa acctctctct
1920
ctctcccttc cccctcagta cttagtctac agacctatgt gcgtgtccct atccttctgt
1980
cctttttctct cttcagctct ccctgcctct cacacacaat tttacatgcc ccgaggagcc
2040
aagtttggga catttaccct ccaggcatct atgtcccctc ttgaagagaa aacacacagc
2100
ttcacacatc caggcatagg gggcaagctc ttggggcatc aggaccctgg agcaccaggt
2160
ccttcctgga atattagatc cacctggaga accgggtctc tctaagtctc acctggggaa
2220
ttcggtccca cctggggcac cagttcccac ctagagcact gtgtcctgcc ctagagcaca
2280
aagacctgct cctccgaga ctctctctga ctgcagccag gcatagtacc cttgcctgtg
2340
tttgctccct ggtccacaga tttggtggct
2370

<210> 5166
<211> 521
<212> PRT
<213> Homo sapiens

<400> 5166
Met Asp Pro Ala Gly Ala Ala Asp Pro Ser Val Pro Pro Asn Pro Leu
1   5   10   15
Thr His Leu Ser Leu Gln Asp Arg Ser Glu Met Gln Leu Gln Ser Glu

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                    20                      25                      30
Ala Asp Arg Arg Ser Leu Pro Gly Thr Trp Thr Arg Ser Ser Pro Glu
        35                  40                  45
His Thr Thr Ile Leu Arg Gly Gly Val Arg Arg Cys Leu Gln Gln Gln
    50                  55                  60
Cys Glu Gln Thr Val Arg Ile Leu His Ala Lys Val Ala Gln Lys Ser
65                  70                  75                      80
Tyr Gly Asn Glu Lys Arg Phe Phe Cys Pro Pro Pro Cys Val Tyr Leu
                85                  90                      95
Ser Gly Pro Gly Trp Arg Val Lys Pro Gly Gln Asp Gln Ala His Gln
                100                 105                 110
Ala Gly Glu Thr Gly Pro Thr Val Cys Gly Tyr Met Gly Leu Asp Ser
            115                 120                 125
Ala Ser Gly Ser Ala Thr Glu Thr Gln Lys Leu Asn Phe Glu Gln Gln
        130                 135                 140
Pro Asp Ser Arg Glu Phe Gly Cys Ala Lys Thr Leu Tyr Ile Ser Asp
145                 150                 155                 160
Ala Asp Lys Arg Lys His Phe Arg Leu Val Leu Arg Leu Val Leu Arg
                165                 170                 175
Gly Gly Arg Glu Leu Gly Thr Phe His Ser Arg Leu Ile Lys Val Ile
                180                 185                 190
Ser Lys Pro Ser Gln Lys Lys Gln Ser Leu Lys Asn Thr Asp Leu Cys
        195                 200                 205
Ile Ser Ser Gly Ser Lys Val Ser Leu Phe Asn Arg Leu Arg Ser Gln
    210                 215                 220
Thr Val Ser Thr Arg Tyr Leu Ser Val Glu Asp Gly Ala Phe Val Ala
225                 230                 235                 240
Ser Ala Arg Gln Trp Ala Ala Phe Thr Leu His Leu Ala Asp Gly His
                245                 250                 255
Ser Ala Gln Gly Asp Phe Pro Pro Arg Glu Gly Tyr Val Arg Tyr Gly
                260                 265                 270
Ser Leu Val Gln Leu Val Cys Thr Val Thr Gly Ile Thr Leu Pro Pro
            275                 280                 285
Met Ile Ile Arg Lys Val Ala Lys Gln Cys Ala Leu Leu Asp Val Asp
        290                 295                 300
Glu Pro Ile Ser Gln Leu His Lys Cys Ala Phe Gln Phe Pro Gly Ser
305                 310                 315                 320
Pro Pro Gly Gly Gly Gly Thr Tyr Leu Cys Leu Ala Thr Glu Lys Val
                325                 330                 335
Val Gln Phe Gln Ala Ser Pro Cys Pro Lys Glu Ala Asn Arg Ala Leu
            340                 345                 350
Leu Asn Asp Ser Ser Cys Trp Thr Ile Ile Gly Thr Glu Ser Val Glu
            355                 360                 365
Phe Ser Phe Ser Thr Ser Leu Ala Cys Thr Leu Glu Pro Val Thr Pro
    370                 375                 380
Val Pro Leu Ile Ser Thr Leu Glu Leu Ser Gly Gly Gly Asp Val Ala
385                 390                 395                 400
Thr Leu Glu Leu His Gly Glu Asn Phe His Ala Gly Leu Lys Val Trp
                405                 410                 415
Phe Gly Asp Val Glu Ala Glu Thr Met Tyr Arg Tyr Gly Val Xaa Ser
            420                 425                 430
Pro Arg Ser Leu Val Cys Val Val Pro Asp Val Ala Ala Phe Cys Ser
        435                 440                 445
Asp Trp Arg Trp Leu Arg Ala Pro Ile Thr Ile Pro Met Ser Leu Val
```

```
        450                 455                 460
Arg Ala Asp Gly Leu Phe Tyr Pro Ser Ala Phe Ser Phe Thr Tyr Thr
465                 470                 475                 480
Pro Glu Tyr Ser Val Arg Pro Gly His Pro Gly Val Pro Glu Pro Ala
                485                 490                 495
Thr Asp Ala Asp Ala Leu Leu Glu Ser Ile His Gln Glu Phe Thr Arg
            500                 505                 510
Thr Asn Phe His Leu Phe Ile Gln Thr
        515                 520
```

<210> 5167
<211> 878
<212> DNA
<213> Homo sapiens

<400> 5167
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gggccccgga ccaggcgctg gggacacagc agtgaaaata ctaacattgt ttctgccctc
60
acggagctca cagtgtaaca gggagacaaa tagacctgtc agtagataac atgaaaataa
120
ttggactgtg tgctgcagac acaatatccc aggtctatga gaatgtcaat acagacttca
180
cgtgggaaat ggtgaggcaa taaggatcgt ttcccttgat gaaatggagc ttgcagaaga
240
aggcagggtc agttgtgggg agctctgggt ggaggtggag ggagtgcatt ccaagctgag
300
ccaagctatg acacctgagt ttcctgcctc tgtgctgcct ccctgttttc cattcccggt
360
tctcagcttc acttgtgggc tgagagtccc tgcgtgggtt attttctgc ctttctcagg
420
gccttgggtt ccccaaatgt cacatgggca cagtaacacc catgtcctag ggttgaagat
480
ggcatgatat gatgtatgta aaatgcttgg cacaaggttt ctcaccgaag tctggaggag
540
ctgtccaggg ttctggagac gaaacggagc ccgctgggaa ctgtcctgag ccccggtgct
600
gaaacagatc gcggttctct tctcggacct cccgagaggc gctgccgga tatttggtgc
660
tcccaagcag tcagccctgc tggtctctgc tttccagacc gtcaaacttc gccatctctg
720
tcccttttg ggaaaatgtc catgcgccaa cctgcaaacc agcctcattc ccggcatccc
780
acgtccctca gaccacccct cctcccacgc agctgcggga ctccccctct gtgtgcctca
840
cctgcttcca gtcttgttgg cagatgcagg tgtcccgt
878
```

<210> 5168
<211> 199
<212> PRT
<213> Homo sapiens

<400> 5168
Met Pro Gly Met Arg Leu Val Cys Arg Leu Ala His Gly His Phe Pro

```
 1                     5                    10                   15
Lys Lys Gly Gln Arg Trp Arg Ser Leu Thr Val Trp Lys Ala Glu Thr
            20                  25                  30
Ser Arg Ala Asp Cys Leu Gly Ala Pro Asn Ile Arg Thr Ala Pro Leu
            35                  40                  45
Gly Arg Ser Glu Lys Arg Thr Ala Ile Cys Phe Ser Thr Gly Ala Gln
            50                  55                  60
Asp Ser Ser Gln Arg Ala Pro Phe Arg Leu Gln Asn Pro Gly Gln Leu
65                  70                  75                  80
Leu Gln Thr Ser Val Arg Asn Leu Val Pro Ser Ile Leu His Thr Ser
                85                  90                  95
Tyr His Ala Ile Phe Asn Pro Arg Thr Trp Val Leu Leu Cys Pro Cys
                100                 105                 110
Asp Ile Trp Gly Thr Gln Gly Pro Glu Lys Gly Arg Lys Ile Thr His
            115                 120                 125
Ala Gly Thr Leu Ser Pro Gln Val Lys Leu Arg Thr Gly Asn Gly Lys
            130                 135                 140
Gln Gly Gly Ser Thr Glu Ala Gly Asn Ser Gly Val Ile Ala Trp Leu
145                 150                 155                 160
Ser Leu Glu Cys Thr Pro Ser Thr Ser Thr Gln Ser Ser Pro Gln Leu
                165                 170                 175
Thr Leu Pro Ser Ser Ala Ser Ser Ile Ser Ser Arg Glu Thr Ile Leu
                180                 185                 190
Ile Ala Ser Pro Phe Pro Thr
            195
```

```
<210> 5169
<211> 609
<212> DNA
<213> Homo sapiens

<400> 5169
accggtggct ttgcactcta cccgctgctc aacgaggctg cgccgttggc gctggggggcc
60
ggtttggtgc ctgaggagct gccaccatcc cgcggggggcc tgggtgaggc actgggtgcc
120
gtggagctta gcctcagcga gttcctgcta ctcttcacca ctgctggcat ctacgtggat
180
ggcgcaggcc gcaagtctcg tggccacgag ctgttgtggc cagcagcgcc catgggctgg
240
gggtatgcgg ccccctacct gacagtgttc agcgagaact ccatcgatgt gtttgacgtg
300
aggagggcag aatgggtgca gaccgtgccg ctcaagaagg tgcggcccct caatccagag
360
ggctccctgt tcctctacgg caccgagaag gtccgcctga cctacctcag gaaccagctg
420
gcagagaagg acgagttcga catcccggac ctcaccgaca acagccggcg ccagctgttc
480
ctcaccaaga gcaagcgccg cttcttttttc cgcgtgtcgg aggagcagca gaagcagcag
540
cgcagggaga tgctgaagga cccttttgtg cgctccaagc tcatctcgcc gcctaccaac
600
ttcaaccac
609
```

<210> 5170
<211> 203
<212> PRT
<213> Homo sapiens

<400> 5170
Thr Gly Gly Phe Ala Leu Tyr Pro Leu Leu Asn Glu Ala Ala Pro Leu
1   5   10   15
Ala Leu Gly Ala Gly Leu Val Pro Glu Glu Leu Pro Pro Ser Arg Gly
            20   25   30
Gly Leu Gly Glu Ala Leu Gly Ala Val Glu Leu Ser Leu Ser Glu Phe
        35   40   45
Leu Leu Leu Phe Thr Thr Ala Gly Ile Tyr Val Asp Gly Ala Gly Arg
    50   55   60
Lys Ser Arg Gly His Glu Leu Leu Trp Pro Ala Ala Pro Met Gly Trp
65   70   75   80
Gly Tyr Ala Ala Pro Tyr Leu Thr Val Phe Ser Glu Asn Ser Ile Asp
                85   90   95
Val Phe Asp Val Arg Arg Ala Glu Trp Val Gln Thr Val Pro Leu Lys
            100   105   110
Lys Val Arg Pro Leu Asn Pro Glu Gly Ser Leu Phe Leu Tyr Gly Thr
            115   120   125
Glu Lys Val Arg Leu Thr Tyr Leu Arg Asn Gln Leu Ala Glu Lys Asp
        130   135   140
Glu Phe Asp Ile Pro Asp Leu Thr Asp Asn Ser Arg Arg Gln Leu Phe
145   150   155   160
Leu Thr Lys Ser Lys Arg Arg Phe Phe Phe Arg Val Ser Glu Glu Gln
                165   170   175
Gln Lys Gln Gln Arg Arg Glu Met Leu Lys Asp Pro Phe Val Arg Ser
                180   185   190
Lys Leu Ile Ser Pro Pro Thr Asn Phe Asn His
            195   200

<210> 5171
<211> 2060
<212> DNA
<213> Homo sapiens

<400> 5171
gaacagaggg ggtggaaact gcatcacaga tgttttccaa ggtccagggt ggaatctgag
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ctctagtgtc tgactttgag atgcattata tttttaacac ataaatgagg ggatccatat
120
cacattcttt cttgtggacc accaaattga aggctttctt gtaattcaca agcagcagct
180
ctccagcatc tctccgtagc ctgggtgaag tcccagaagc tggtgtgcat cattttccaa
240
ggtggcagag ctgcttgctc tgcagatcat tcctttgaga gaggagtaca agtgaagaaa
300
caaggaggca cttcctgtag gagcactgat gtgccttgtc cacactcccc tctgagcttt
360
actggtaaga gagctccgac tgaacatgct gagcagttga gcactttttcc atcagcaaca
420

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acagcgagga tggaaatgga aaggaaccga actaaaatgc atttcccttt gcagggcaga
480
gagctaagct cttaggaata gtgttataga aataagcacc ctaacttcaa ttcctgaaaa
540
tgttggttaa tggagagaat tttggagttt cacttaatat tttcccatcg gtcgccataa
600
ataagtcttc aggcgctcct agaagagtcc cagcccaagg ctcgattaag gaccacactg
660
caggtctgag gctcactgct ctgagtcctg aacaccagag ccctgcagag agtggtgata
720
acacatcatc tctgcaaaga ggaacctctc ccccggccgc cacttcactc aggcttctac
780
tgagcagcaa ggacagcctg ggtttcaaat gccacttccc ctgctttagg gatccaggtg
840
tcctgatagc gtgaccctgc tgaggcaagg tatcaactcc gagagtgact gagtcactga
900
gcgtggcaca tgaacaaacg tcatgacaaa gattctctga gtgaagttaa caccacgtat
960
tttacctttg caaaaaacaa actggcaccc tgagttctaa ctacggacgg acgatatctt
1020
tgcctccaca cccagattcc tggaaatggc taacgtttcc tttctagggg aagggtcgag
1080
gaatactcaa gtgctagctt agcagctttg ttcagtccag atcagagctg ttaggtaaag
1140
gcctaaccac ctccctgcag tctcttatat ctcaagcttt aggaacccat ttctaaatgt
1200
acactagcgg agaatttata ttgtcagcct tgattaccat aggacaggca gaaaggcgat
1260
aatttgtatc ttttaatata aaagaagctt ttaacttttc cagcctatta ttataactga
1320
gttatattca ctgtggctca aactaattgg cattgtggaa catttcttta ccttcaaagt
1380
tttctccacc aatcatttca gttctattgc agtcctggtg ccatatgtcc cctgcaaatt
1440
gtgaaagtaa ttagtgacaa aatagcagcc tgctcctttt caatggcgaa actgtcggca
1500
ttagcagttt tgggtaagct ggcggtacta taacacgtac tggaaacctg ttcctcatca
1560
ccacctacca gattctggaa atgccgtctt ctagaaaacg atggcgtttg tggtggtctt
1620
cttttgaaag gaacagtaat ttgtgtggat attgttaaag tgtttaaaga atattttgac
1680
aattaagttt acattttaca attgctttat tttttattaa aatagttgta tataaatatt
1740
accctatttc actgttgttc aagtaaatct aaaccttgta gacaagtgag tcacctgata
1800
tgtatagaag ctgtgatata tagagtacat ttattgtgta aatgtttatg aatataattg
1860
ttcctgtgtt tttataagtt ggggatattt tgttgtttta cggcaacaaa atttattgca
1920
tttaaatggt ttttatgtaa tagaaatcac gcaaaatagt gaaggattta aaatatgtat
1980
atgatacatg taaatgtaca aactttagaa agaaataaat ccaacaaatt tcaaaaaaaa
2040
```

4352

aaaaaaaaaa aaaaaaaaaa
2060

<210> 5172
<211> 104
<212> PRT
<213> Homo sapiens

<400> 5172
Met Leu Val Asn Gly Glu Asn Phe Gly Val Ser Leu Asn Ile Phe Pro
1   5   10   15
Ser Val Ala Ile Asn Lys Ser Ser Gly Ala Pro Arg Arg Val Pro Ala
                20   25   30
Gln Gly Ser Ile Lys Asp His Thr Ala Gly Leu Arg Leu Thr Ala Leu
            35   40   45
Ser Pro Glu His Gln Ser Pro Ala Glu Ser Gly Asp Asn Thr Ser Ser
        50   55   60
Leu Gln Arg Gly Thr Ser Pro Pro Ala Ala Thr Ser Leu Arg Leu Leu
65   70   75   80
Leu Ser Ser Lys Asp Ser Leu Gly Phe Lys Cys His Phe Pro Cys Phe
                85   90   95
Arg Asp Pro Gly Val Leu Ile Ala
            100

<210> 5173
<211> 557
<212> DNA
<213> Homo sapiens

<400> 5173
ctttgatgcc tttattgatt caacacatgc ttattatatg cttgctgtgt gccgggcccc
60
agaccaggcg ctggagacac agcagtgaaa atactaacat tgtttctgcc ctcacggagc
120
tcacagtgta acagggagac aaatagacct gtcagtagat aacatgaaaa taattggact
180
atgtgctgca gacacaatat cccaggtcta tgagaatgtc aatacagact tcacgtggga
240
aatggtgagg caataaggat cgtttccctt gatgaaatgg agcttgcaga agaaggcagg
300
gtcagttgtg gggagctctg gttggaggtg gagggagtgc attccaagct ggaggagctg
360
tccagggttc tggagactaa acggagcccg ctgggaactg tcctgagccc cggtgctgaa
420
acagatcgcg gttctcttct cggacctccc gagaagcgct gtccggatat ttggtgctcc
480
caagcagtca gccctgctgg tctctgcttt ccagaccggc aaacttcgcc gtctctgtcc
540
ctttctggga aaatggc
557

<210> 5174
<211> 93
<212> PRT

<213> Homo sapiens

<400> 5174
Met Glu Leu Ala Glu Glu Gly Arg Val Ser Cys Gly Glu Leu Trp Leu
1   5   10   15
Glu Val Glu Gly Val His Ser Lys Leu Glu Glu Leu Ser Arg Val Leu
            20   25   30
Glu Thr Lys Arg Ser Pro Leu Gly Thr Val Leu Ser Pro Gly Ala Glu
        35   40   45
Thr Asp Arg Gly Ser Leu Leu Gly Pro Pro Glu Lys Arg Cys Pro Asp
    50   55   60
Ile Trp Cys Ser Gln Ala Val Ser Pro Ala Gly Leu Cys Phe Pro Asp
65   70   75   80
Arg Gln Thr Ser Pro Ser Leu Ser Leu Ser Gly Lys Met
                85   90

<210> 5175
<211> 272
<212> DNA
<213> Homo sapiens

<400> 5175
ccatggcagc tccagagacc aggtggaggg gaaatcaccc cacgctcccg agcagagagc
60
ttcggagcca gccagcctca ctgtgcgtgg cccacaacag ctgtctccat gtgtcacgtg
120
agggctgccc aacaccaggt agggcagcaa cgcccacgcc ctcgccgggc acagcctccc
180
agaggtcact gccatgccgc actgaccgga gagagggcag tggtgagagg tgcatgccac
240
cccaggcttg ttccgaaggc ccnnnnnncc nc
272

<210> 5176
<211> 90
<212> PRT
<213> Homo sapiens

<400> 5176
Met Ala Ala Pro Glu Thr Arg Trp Arg Gly Asn His Pro Thr Leu Pro
1   5   10   15
Ser Arg Glu Leu Arg Ser Gln Pro Ala Ser Leu Cys Val Ala His Asn
            20   25   30
Ser Cys Leu His Val Ser Arg Glu Gly Cys Pro Thr Pro Gly Arg Ala
        35   40   45
Ala Thr Pro Thr Pro Ser Pro Gly Thr Ala Ser Gln Arg Ser Leu Pro
    50   55   60
Cys Arg Thr Asp Arg Arg Glu Gly Ser Gly Glu Arg Cys Met Pro Pro
65   70   75   80
Gln Ala Cys Ser Glu Gly Pro Xaa Xaa Xaa
                85   90

<210> 5177
<211> 637

<212> DNA
<213> Homo sapiens

<400> 5177
ntcctagtga gtatcgagtt ggtcttatta tcgcgtgaac tgggagcctt tgtttcctgc
60
gtgtcgcagg aagtgacgtt tcgggtacag ccgctaccag agtcccttc tcgcgaggcg
120
gaagaacccc gatcgctgag gagcaagggg gcgctaggaa agggaactgg gttgcgacgg
180
tccggcgaga gagagctggg gtgctggggt gcggggaagt tggggagcag aggccgcttg
240
gtgtccgagt agggtaagac cgcaccgacc cagtccgtta ggaaagaagg gaaacgaggc
300
aattgtcggg cggatccccg gacggagggc taaggttgtg tggaaggcgc tgctccccgg
360
atggcgaccg cagatactcc ggccccggcc tccagtggcc tctcgccgaa ggaagaaggg
420
gagcttgaag atggggaaat cagtgacgac gataataaca gccagatacg gagtcggagc
480
agcagcagca gcagcggcgg cgggctgtta ccctatccgc ggcgaaggcc tcctcactcg
540
gcccggggcg gtggatctgg cggaggcggt ggctcttcct cgtcatcgtc ctcttctcag
600
cagcagctga ggaatttctc acgctcgcgg cacgcgt
637

<210> 5178
<211> 92
<212> PRT
<213> Homo sapiens

<400> 5178
Met Ala Thr Ala Asp Thr Pro Ala Pro Ala Ser Ser Gly Leu Ser Pro
1   5   10   15
Lys Glu Glu Gly Glu Leu Glu Asp Gly Glu Ile Ser Asp Asp Asp Asn
            20   25   30
Asn Ser Gln Ile Arg Ser Arg Ser Ser Ser Ser Ser Gly Gly Gly
        35   40   45
Leu Leu Pro Tyr Pro Arg Arg Arg Pro Pro His Ser Ala Arg Gly Gly
    50   55   60
Gly Ser Gly Gly Gly Gly Gly Ser Ser Ser Ser Ser Ser Ser Ser Gln
65   70   75   80
Gln Gln Leu Arg Asn Phe Ser Arg Ser Arg His Ala
                85   90

<210> 5179
<211> 1527
<212> DNA
<213> Homo sapiens

<400> 5179
ggaacacagg ccatgccgcc tcctctctct tgggattacc accagtgcac ctggaactat
60

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gaagttgagc cggatgtaaa agcagtggat gcagggtttg atgggcatga cattccttat
120
gatgccatgt ggctggacat agagcacact gagggcaaga ggtacttcac ctgggacaaa
180
aacagattcc ctaaccccaa gaggatgcaa gagctgctca ggaacaaaaa gcgtaagctt
240
gtggtcatca gtgatcccca catcaagatt gaacctgact actcagtata tgtgaaggcc
300
aaagatcagg gcttctttgt gaagaatcag gaaggggaag actttgaagg ggtgtgttgg
360
ccaggtctct cctcttacct ggatttcacc aatcccaagg tcagagagtg gtattcaagt
420
ctttttgctt tccctgttta tcagggatct acggacatcc tcttcctttg gaatgacatg
480
aatgagcctt ctgtctttag agggccagag caaaccatgc agaagaatgc cattcatcat
540
ggcaattggg agcacagaga gctccacaac atctacggtt tttatcatca aatggctact
600
gcagaaggac tgataaaacg atctaaaggg aaggagagac cctttgttct tacacgttct
660
ttctttgctg gatcacaaaa gtatggtgcc gtgtggacag gcgacaacac agcagaatgg
720
agcaacttga aaatttctat cccaatgtta ctcactctca gcattactgg gatctctttt
780
tgcggagctg acataggcgg gttcattggg aatccagaga cagagctgct agtgcgttgg
840
taccaggctg gagcctacca gcccttcttc cgtggccatg ccaccatgaa caccaagcga
900
cgagagccct ggctctttgg ggaggaacac acccgactca tccgagaagc catcagagag
960
cgctatggcc tcctgccata ttggtattct ctgttctacc atgcacacgt ggcttcccaa
1020
cctgtcatga ggcctctgtg ggtagagttc cctgatgaac taaagacttt tgatatggaa
1080
gatgaataca tgctggggag tgcattattg gttcatccag tcacagaacc aaaagccacc
1140
acagttgatg tgtttcttcc aggatcaaat gaggtctggt atgactataa gacatttgct
1200
cattgggaag gagggtgtac tgtaaagatc ccagtagcct tggacactat tccagtgttt
1260
cagcgaggtg gaagtgtgat accaataaag acaactgtag gaaaatccac aggctggatg
1320
actgaatcct cctagggact ccgggttgct ctaagcacta agggttcttc agtgggtgag
1380
ttatatcttg atgatggcca ttcattccaa tacctccacc agaagcaatt tttgcacagg
1440
aagtttttcat tctgttccag tgttctgatc aatagttttg ctgaccagag gggtcattat
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cccagcaagt gtgtggtgga gaagatc
1527

<210> 5180
<211> 444
<212> PRT
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                                   4356

<213> Homo sapiens

<400> 5180

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Gly Thr Gln Ala Met Pro Pro Pro Leu Ser Trp Asp Tyr His Gln Cys
1               5                   10                  15
Thr Trp Asn Tyr Glu Val Glu Pro Asp Val Lys Ala Val Asp Ala Gly
            20                  25                  30
Phe Asp Gly His Asp Ile Pro Tyr Asp Ala Met Trp Leu Asp Ile Glu
        35                  40                  45
His Thr Glu Gly Lys Arg Tyr Phe Thr Trp Asp Lys Asn Arg Phe Pro
    50                  55                  60
Asn Pro Lys Arg Met Gln Glu Leu Leu Arg Asn Lys Lys Arg Lys Leu
65                  70                  75                  80
Val Val Ile Ser Asp Pro His Ile Lys Ile Glu Pro Asp Tyr Ser Val
                85                  90                  95
Tyr Val Lys Ala Lys Asp Gln Gly Phe Phe Val Lys Asn Gln Glu Gly
            100                 105                 110
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Phe Thr Asn Pro Lys Val Arg Glu Trp Tyr Ser Ser Leu Phe Ala Phe
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Pro Val Tyr Gln Gly Ser Thr Asp Ile Leu Phe Leu Trp Asn Asp Met
145                 150                 155                 160
Asn Glu Pro Ser Val Phe Arg Gly Pro Glu Gln Thr Met Gln Lys Asn
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Ala Ile His His Gly Asn Trp Glu His Arg Glu Leu His Asn Ile Tyr
            180                 185                 190
Gly Phe Tyr His Gln Met Ala Thr Ala Glu Gly Leu Ile Lys Arg Ser
        195                 200                 205
Lys Gly Lys Glu Arg Pro Phe Val Leu Thr Arg Ser Phe Phe Ala Gly
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Ser Gln Lys Tyr Gly Ala Val Trp Thr Gly Asp Asn Thr Ala Glu Trp
225                 230                 235                 240
Ser Asn Leu Lys Ile Ser Ile Pro Met Leu Leu Thr Leu Ser Ile Thr
                245                 250                 255
Gly Ile Ser Phe Cys Gly Ala Asp Ile Gly Gly Phe Ile Gly Asn Pro
            260                 265                 270
Glu Thr Glu Leu Leu Val Arg Trp Tyr Gln Ala Gly Ala Tyr Gln Pro
        275                 280                 285
Phe Phe Arg Gly His Ala Thr Met Asn Thr Lys Arg Arg Glu Pro Trp
    290                 295                 300
Leu Phe Gly Glu Glu His Thr Arg Leu Ile Arg Glu Ala Ile Arg Glu
305                 310                 315                 320
Arg Tyr Gly Leu Leu Pro Tyr Trp Tyr Ser Leu Phe Tyr His Ala His
            325                 330                 335
Val Ala Ser Gln Pro Val Met Arg Pro Leu Trp Val Glu Phe Pro Asp
            340                 345                 350
Glu Leu Lys Thr Phe Asp Met Glu Asp Glu Tyr Met Leu Gly Ser Ala
    355                 360                 365
Leu Leu Val His Pro Val Thr Glu Pro Lys Ala Thr Thr Val Asp Val
    370                 375                 380
Phe Leu Pro Gly Ser Asn Glu Val Trp Tyr Asp Tyr Lys Thr Phe Ala
385                 390                 395                 400
His Trp Glu Gly Gly Cys Thr Val Lys Ile Pro Val Ala Leu Asp Thr
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<210> 5181
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<212> DNA
<213> Homo sapiens

<400> 5181
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1260
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4359

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4500
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4961

<210> 5182
<211> 697
<212> PRT
<213> Homo sapiens

<400> 5182
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            20   25   30
Met Gly Ala Leu Ala Ala Ile Leu Ala Tyr Trp Phe Thr His Arg Pro
        35   40   45
Lys Ala Leu Gln Pro Pro Cys Asn Leu Leu Met Gln Ser Glu Glu Val
    50   55   60
Glu Asp Ser Gly Gly Ala Arg Arg Ser Val Ile Gly Ser Gly Pro Gln
65   70   75   80
Leu Leu Thr His Tyr Tyr Asp Asp Ala Arg Thr Met Tyr Gln Val Phe
                85   90   95
Arg Arg Gly Leu Ser Ile Ser Gly Asn Gly Pro Cys Leu Gly Phe Arg
            100   105   110
Lys Pro Lys Gln Pro Tyr Gln Trp Leu Ser Tyr Gln Glu Val Ala Asp
        115   120   125
Arg Ala Glu Phe Leu Gly Ser Gly Leu Leu Gln His Asn Cys Lys Ala
    130   135   140
Cys Thr Asp Gln Phe Ile Gly Val Phe Ala Gln Asn Arg Pro Glu Trp
145   150   155   160
Ile Ile Val Glu Leu Ala Cys Tyr Thr Tyr Ser Met Val Val Val Pro
                165   170   175
Leu Tyr Asp Thr Leu Gly Pro Gly Ala Ile Arg Tyr Ile Ile Asn Thr
            180   185   190
Ala Asp Ile Ser Thr Val Ile Val Asp Lys Pro Gln Lys Ala Val Leu
        195   200   205
Leu Leu Glu His Val Glu Arg Lys Glu Thr Pro Gly Leu Lys Leu Ile
    210   215   220
Ile Leu Met Asp Pro Phe Glu Glu Ala Leu Lys Glu Arg Gly Gln Lys
225   230   235   240
Cys Gly Val Val Ile Lys Ser Met Gln Ala Val Glu Asp Cys Gly Gln

4361

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                    245                     250                     255
Glu Asn His Gln Ala Pro Val Pro Pro Gln Pro Asp Asp Leu Ser Ile
                260                     265                     270
Val Cys Phe Thr Ser Gly Thr Thr Gly Asn Pro Lys Gly Ala Met Leu
                275                     280                     285
Thr His Gly Asn Val Val Ala Asp Phe Ser Gly Phe Leu Lys Val Thr
            290                     295                     300
Glu Ser Gln Trp Ala Pro Thr Cys Ala Asp Val His Ile Ser Tyr Leu
305                     310                     315                     320
Pro Leu Ala His Met Phe Glu Arg Met Val Gln Ser Val Val Tyr Cys
                325                     330                     335
His Gly Gly Arg Val Gly Phe Phe Gln Gly Asp Ile Arg Leu Leu Ser
            340                     345                     350
Asp Asp Met Lys Ala Leu Cys Pro Thr Ile Phe Pro Val Val Pro Arg
            355                     360                     365
Leu Leu Asn Arg Met Tyr Asp Lys Ile Phe Ser Gln Ala Asn Thr Pro
            370                     375                     380
Leu Lys Arg Trp Leu Leu Glu Phe Ala Ala Lys Arg Lys Gln Ala Glu
385                     390                     395                     400
Val Arg Ser Gly Ile Ile Arg Asn Asp Ser Ile Trp Asp Glu Leu Phe
                405                     410                     415
Phe Asn Lys Ile Gln Ala Ser Leu Gly Gly Cys Val Arg Met Ile Val
            420                     425                     430
Thr Gly Ala Ala Pro Ala Ser Pro Thr Val Leu Gly Phe Leu Arg Ala
            435                     440                     445
Ala Leu Gly Cys Gln Val Tyr Glu Gly Tyr Gly Gln Thr Glu Cys Thr
            450                     455                     460
Ala Gly Cys Thr Phe Thr Thr Pro Gly Asp Trp Thr Ser Gly His Val
465                     470                     475                     480
Gly Ala Pro Leu Pro Cys Asn His Ile Lys Leu Val Asp Val Glu Glu
                485                     490                     495
Leu Asn Tyr Trp Ala Cys Lys Gly Glu Gly Glu Ile Cys Val Arg Gly
                500                     505                     510
Pro Asn Val Phe Lys Gly Tyr Leu Lys Asp Pro Asp Arg Thr Lys Glu
            515                     520                     525
Ala Leu Asp Ser Asp Gly Trp Leu His Thr Gly Asp Ile Gly Lys Trp
            530                     535                     540
Leu Pro Ala Gly Thr Leu Lys Ile Ile Asp Arg Lys Lys His Ile Phe
545                     550                     555                     560
Lys Leu Ala Gln Gly Glu Tyr Val Ala Pro Glu Lys Ile Glu Asn Ile
                565                     570                     575
Tyr Ile Arg Ser Gln Pro Val Ala Gln Ile Tyr Val His Gly Asp Ser
            580                     585                     590
Leu Lys Ala Phe Leu Val Gly Ile Val Val Pro Asp Pro Glu Val Met
            595                     600                     605
Pro Ser Trp Ala Gln Lys Arg Gly Ile Glu Gly Thr Tyr Ala Asp Leu
        610                     615                     620
Cys Thr Asn Lys Asp Leu Lys Lys Ala Ile Leu Glu Asp Met Val Arg
625                     630                     635                     640
Leu Gly Lys Glu Ser Gly Leu His Ser Phe Glu Gln Val Lys Ala Ile
                645                     650                     655
His Ile His Ser Asp Met Phe Ser Val Gln Asn Gly Leu Leu Thr Pro
            660                     665                     670
Thr Leu Lys Ala Lys Arg Pro Glu Leu Arg Glu Tyr Phe Lys Lys Gln
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Ile Glu Glu Leu Tyr Ser Ile Ser Met
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<210> 5183
<211> 2466
<212> DNA
<213> Homo sapiens

<400> 5183
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1320
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2466

<210> 5184
<211> 395
<212> PRT
<213> Homo sapiens

<400> 5184
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Lys Val Arg Gly Ala Ala Leu Lys Leu Gly Gln Met Leu Ser Ile Gln
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Asp Asp Ala Phe Ile Asn Pro His Leu Ala Lys Ile Phe Glu Arg Val
        35   40   45
Arg Gln Ser Ala Asp Phe Met Pro Leu Lys Gln Met Met Lys Thr Leu

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Asn Asn Asp Leu Gly Pro Asn Trp Arg Asp Lys Leu Glu Tyr Phe Glu
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Glu Arg Pro Phe Ala Ala Ala Ser Ile Gly Gln Val His Leu Ala Arg
                    85                 90                      95
Met Lys Gly Gly Arg Glu Val Ala Met Lys Ile Gln Tyr Pro Gly Val
                100                105                110
Ala Gln Ser Ile Asn Ser Asp Val Asn Asn Leu Met Ala Val Leu Asn
            115                120                125
Met Ser Asn Met Leu Pro Glu Gly Leu Phe Pro Glu His Leu Ile Asp
        130                135                140
Val Leu Arg Arg Glu Leu Ala Leu Glu Cys Asp Tyr Gln Arg Glu Ala
145                150                155                160
Ala Cys Ala Arg Lys Phe Arg Asp Leu Leu Lys Gly His Pro Phe Phe
                165                170                175
Tyr Val Pro Glu Ile Val Asp Glu Leu Cys Ser Pro His Val Leu Thr
                180                185                190
Thr Glu Leu Val Ser Gly Phe Pro Leu Asp Gln Ala Glu Gly Leu Ser
            195                200                205
Gln Glu Ile Arg Asn Glu Ile Cys Tyr Asn Ile Leu Val Leu Cys Leu
        210                215                220
Arg Glu Leu Phe Glu Phe His Phe Met Gln Thr Asp Pro Asn Trp Ser
225                230                235                240
Asn Phe Phe Tyr Asp Pro Gln Gln His Lys Val Ala Leu Leu Asp Phe
                245                250                255
Gly Ala Thr Arg Glu Tyr Asp Arg Ser Phe Thr Asp Leu Tyr Ile Gln
            260                265                270
Ile Ile Arg Ala Ala Ala Asp Arg Asp Arg Glu Thr Val Arg Ala Lys
        275                280                285
Ser Ile Glu Met Lys Phe Leu Thr Gly Tyr Glu Val Lys Val Met Glu
        290                295                300
Asp Ala His Leu Asp Ala Ile Leu Ile Leu Gly Glu Ala Phe Ala Ser
305                310                315                320
Asp Glu Pro Phe Asp Phe Gly Thr Gln Ser Thr Thr Glu Lys Ile His
                325                330                335
Asn Leu Ile Pro Val Met Leu Arg His Arg Leu Val Pro Pro Pro Glu
            340                345                350
Glu Thr Tyr Ser Leu His Arg Lys Met Gly Gly Ser Phe Leu Ile Cys
            355                360                365
Ser Lys Leu Lys Ala Arg Phe Pro Cys Lys Ala Met Phe Glu Glu Ala
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385                390                395
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<211> 1657
<212> DNA
<213> Homo sapiens

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120
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300
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420
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cacaaacctg ggagactgca agacttctat gattccacag caggaaaatt caatcaccct
780
gagatagtcc agcttgtttc tgaacttgag gcagaaagaa gcactaacat agctgcagct
840
gccagtgagc cacactcctg agacactctc taaattgctg cactcctgta acaaacatta
900
tttttccatt tcattgtatt gtgttttgcc attgttggtc tgttgatttc cctagatgtg
960
agtctgtttg ttttcaattg tctgaacttc agcaagaaat gtgatacaac ttgggcacta
1020
aaagaagcca cagaacagga agcggtcatg aaagtgccat ggatgaacac tggaggtggc
1080
agtgcctgtt tatgaactaa ataaataaat attaaacacc taaaatatta gaatatttat
1140
tggagattta aaatcatctt attctgactt aattaccgat atccccgaag gctaggttca
1200
ttgaataata gaaaatttca ttatgattgc ttttaagaac agattcttca gctgatttag
1260
tgataagaat ccagaaaaga aaatgtacta gtgatgtatt ctctccccag atgaaattgc
1320
tgccttattc agatttactc tcttgagcca gattttgaat ttcactgcag actgcttcag
1380
acttctaatc ataggcttgt aaacctacta ataggctctg ccctcttcc caatactttt
1440
tgtcatttag agatataaac cggggcatat aaaaatgcaa cttgtattcc tttgtatatt
1500
tttccctgtc tgacttataa atcttgagac ctttattgta aaagcattta tcatcaggtg
1560
agaaatataa ataggaactg gggtcattga gcctcaggta gggaatatat caacccgatt
1620
tcttcctctc ttttcccttt tataggataa ataatcc
1657

<210> 5186

<211> 243
<212> PRT
<213> Homo sapiens

<400> 5186
Met Arg Asn Ser Leu Asp Leu Val Pro Leu Arg His Met Ser Val Gln
 1   5   10   15
Thr Gly Asp Tyr Lys Ser Leu Lys Ile Leu Gly Leu Leu Glu Ile Ser
            20   25   30
Leu Ala Ile Tyr Ser Ser Leu Val Ser Gln Ile Ser Leu Cys His Pro
        35   40   45
Gly Trp Ser Thr Val Val Arg Ser Gln Leu Thr Ala Thr Ser Ala Ser
    50   55   60
Arg Phe Lys Arg Phe Ala Cys Leu Cys Leu Ser Tyr Val Pro Phe Arg
65   70   75   80
Lys Ile Leu Leu Gln Glu Lys Ile Trp Phe Gln Asp Val Ser Trp Thr
                85   90   95
Gly Gly His Val Pro Arg Val Pro Arg Thr Gly Trp Val Tyr Arg Asn
            100   105   110
Val Gln Arg Pro Glu Ser Val Ser Asp His Met Tyr Arg Met Ala Val
        115   120   125
Met Ala Met Val Ile Lys Asp Asp Arg Leu Asn Lys Asp Xaa Glu Ala
    130   135   140
Met Lys Gln Ile Thr Gln Leu Leu Pro Glu Asp Leu Arg Lys Glu Leu
145   150   155   160
Tyr Glu Leu Trp Glu Glu Tyr Glu Thr Gln Ser Ser Ala Glu Ala Lys
                165   170   175
Phe Val Lys Gln Leu Asp Gln Cys Glu Met Ile Leu Gln Ala Ser Glu
            180   185   190
Tyr Glu Asp Leu Glu His Lys Pro Gly Arg Leu Gln Asp Phe Tyr Asp
        195   200   205
Ser Thr Ala Gly Lys Phe Asn His Pro Glu Ile Val Gln Leu Val Ser
    210   215   220
Glu Leu Glu Ala Glu Arg Ser Thr Asn Ile Ala Ala Ala Ala Ser Glu
225   230   235   240
Pro His Ser

<210> 5187
<211> 1712
<212> DNA
<213> Homo sapiens

<400> 5187
nttttgtctt gtcggctcct gtgtgtagga gggatttcgg cctgagagcg ggccgaggag
60
attggcgacg gtgtcgcccg tgttttcgtt ggcgggtgcc tgggctggtg ggaacagccg
120
cccgaaggaa gcaccatgat ttcggccgcg cagttgttgg atgagttaat gggccgggac
180
cgaaacctag ccccggacga gaagcgcagc aacgtgcggt gggaccacga gagcgtttgt
240
aaatattatc tctgtggttt ttgtcctgcg gaattgttca caaatacacg ttctgatctt
300

```
ggtccgtgtg aaaaaattca tgatgaaaat ctacgaaaac agtatgagaa gagctctcgt
360
ttcatgaaag ttggctatga gagagatttt ttgcgatact tacagagctt acttgcagaa
420
gtagaacgta ggatcagacg aggccatgct cgtttggcat tatctcaaaa ccagcagtct
480
tctggggccg ctggcccaac aggcaaaaat gaagaaaaaa ttcaggttct aacagacaaa
540
attgatgtac ttctgcaaca gattgaagaa ttagggtctg aaggaaaagt agaagaagcc
600
caggggatga tgaaattagt tgagcaatta aaagaagaga gagaactgct aaggtccaca
660
acgtcgacaa ttgaaagctt tgctgcacaa gaaaaacaaa tggaagtttg tgaagtatgt
720
ggagcctttt taatagtagg agatgcccag tcccgggtag atgaccattt gatgggaaaa
780
caacacatgg gctatgccaa aattaaagct actgtagaag aattaaaaga aaagttaagg
840
aaaagaaccg aagaacctga tcgtgatgag cgtctaaaaa aggagaagca agaaagagaa
900
gaaagagaaa aagaacggga gagagaaagg gaagaaagag aaaggaaaag acgaagggaa
960
gaggaagaaa gagaaaaaga aagggctcgt gacagagaaa gaagaaagag aagtcgttca
1020
cgaagtagac actcaagccg aacatcagac agaagatgca gcaggtctcg ggaccacaaa
1080
aggtcacgaa gtagagaaag aaggcggagc agaagtagag atcgacgaag aagcagaagc
1140
catgatcgat cagaaagaaa acacagatct cgaagtcggg atcgaagaag atcaaaaagc
1200
cgggatcgaa agtcatataa gcacaggagc aaaagtcggg acagagaaca agatagaaaa
1260
tccaaggaga aagaaaagag gggatctgat gataaaaaaa gtagtgtgaa gtccggtagt
1320
cgagaaaagc agagtgaaga cacaaacact gaatcgaagg aaagtgatac taagaatgag
1380
gtcaatggga ccagtgaaga cattaaatct gaagtgcagc gtaagtatgc acagatgaag
1440
atggaactaa gccgagtaag aagacataca aaagcctctt ctgaaggaaa agacagtgta
1500
gtcctgcaaa acattttgag gtacattgtt ttgtctcagc tattttgtag cagactcgtg
1560
cccccattag tgtgcctctt tggaaattat cgcccacatt tgtaatatag tcgccattga
1620
aaagttaatt atcctttttt tagggatttt gatgtcgttt cttttttttt ttaatacaaa
1680
ggttgaactg tttttttttt ccttttttgg tt
1712
```

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<210> 5188
<211> 489
<212> PRT
<213> Homo sapiens
```

<400> 5188

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Met Ile Ser Ala Ala Gln Leu Leu Asp Glu Leu Met Gly Arg Asp Arg
1               5               10              15
Asn Leu Ala Pro Asp Glu Lys Arg Ser Asn Val Arg Trp Asp His Glu
            20              25              30
Ser Val Cys Lys Tyr Tyr Leu Cys Gly Phe Cys Pro Ala Glu Leu Phe
        35              40              45
Thr Asn Thr Arg Ser Asp Leu Gly Pro Cys Glu Lys Ile His Asp Glu
    50              55              60
Asn Leu Arg Lys Gln Tyr Glu Lys Ser Ser Arg Phe Met Lys Val Gly
65              70              75              80
Tyr Glu Arg Asp Phe Leu Arg Tyr Leu Gln Ser Leu Leu Ala Glu Val
            85              90              95
Glu Arg Arg Ile Arg Arg Gly His Ala Arg Leu Ala Leu Ser Gln Asn
            100             105             110
Gln Gln Ser Ser Gly Ala Ala Gly Pro Thr Gly Lys Asn Glu Glu Lys
        115             120             125
Ile Gln Val Leu Thr Asp Lys Ile Asp Val Leu Leu Gln Gln Ile Glu
    130             135             140
Glu Leu Gly Ser Glu Gly Lys Val Glu Glu Ala Gln Gly Met Met Lys
145             150             155             160
Leu Val Glu Gln Leu Lys Glu Glu Arg Glu Leu Leu Arg Ser Thr Thr
            -165            170             175
Ser Thr Ile Glu Ser Phe Ala Ala Gln Glu Lys Gln Met Glu Val Cys
        180             185             190
Glu Val Cys Gly Ala Phe Leu Ile Val Gly Asp Ala Gln Ser Arg Val
        195             200             205
Asp Asp His Leu Met Gly Lys Gln His Met Gly Tyr Ala Lys Ile Lys
    210             215             220
Ala Thr Val Glu Glu Leu Lys Glu Lys Leu Arg Lys Arg Thr Glu Glu
225             230             235             240
Pro Asp Arg Asp Glu Arg Leu Lys Lys Glu Lys Gln Glu Arg Glu Glu
            245             250             255
Arg Glu Lys Glu Arg Glu Arg Glu Arg Glu Glu Arg Glu Arg Lys Arg
            260             265             270
Arg Arg Glu Glu Glu Glu Arg Glu Lys Glu Arg Ala Arg Asp Arg Glu
        275             280             285
Arg Arg Lys Arg Ser Arg Ser Arg Ser Arg His Ser Ser Arg Thr Ser
    290             295             300
Asp Arg Arg Cys Ser Arg Ser Arg Asp His Lys Arg Ser Arg Ser Arg
305             310             315             320
Glu Arg Arg Arg Ser Arg Ser Arg Asp Arg Arg Ser Arg Ser His
            325             330             335
Asp Arg Ser Glu Arg Lys His Arg Ser Arg Ser Arg Asp Arg Arg Arg
    340             345             350
Ser Lys Ser Arg Asp Arg Lys Ser Tyr Lys His Arg Ser Lys Ser Arg
    355             360             365
Asp Arg Glu Gln Asp Arg Lys Ser Lys Glu Lys Glu Lys Arg Gly Ser
    370             375             380
Asp Asp Lys Lys Ser Ser Val Lys Ser Gly Ser Arg Glu Lys Gln Ser
385             390             395             400
Glu Asp Thr Asn Thr Glu Ser Lys Glu Ser Asp Thr Lys Asn Glu Val
            405             410             415
Asn Gly Thr Ser Glu Asp Ile Lys Ser Glu Val Gln Arg Lys Tyr Ala
```

```
                    420                  425                 430
Gln Met Lys Met Glu Leu Ser Arg Val Arg Arg His Thr Lys Ala Ser
         435                  440                  445
Ser Glu Gly Lys Asp Ser Val Val Leu Gln Asn Ile Leu Arg Tyr Ile
     450                  455                  460
Val Leu Ser Gln Leu Phe Cys Ser Arg Leu Val Pro Pro Leu Val Cys
465                  470                  475                 480
Leu Phe Gly Asn Tyr Arg Pro His Leu
                485
```

```
<210> 5189
<211> 323
<212> DNA
<213> Homo sapiens


<400> 5189
acgcgtgaag ggattacagg catgagccac tgcacctggc caggagaaat tgtttttata
60
acgtatgaca aatgcttgag taattcctgg cttgaaagtg ggctcacaat aaataactgg
120
aatccaaaaa taacaaaatg tttagcaatt caggtaatgt caagcagtat tcaaacacat
180
gaagttaatc attccttaat tcctgtttat ttatatttca tttttgcttt cttttttactc
240
catgtgttat tcctacagaa gtcacaagtt aaatgttttt ggggaacttt gggggggggg
300
gacaaacatc catgtgctgc taa
323


<210> 5190
<211> 100
<212> PRT
<213> Homo sapiens


<400> 5190
Met Ser His Cys Thr Trp Pro Gly Glu Ile Val Phe Ile Thr Tyr Asp
1               5                  10                  15
Lys Cys Leu Ser Asn Ser Trp Leu Glu Ser Gly Leu Thr Ile Asn Asn
           20                  25                  30
Trp Asn Pro Lys Ile Thr Lys Cys Leu Ala Ile Gln Val Met Ser Ser
         35                  40                  45
Ser Ile Gln Thr His Glu Val Asn His Ser Leu Ile Pro Val Tyr Leu
     50                  55                  60
Tyr Phe Ile Phe Ala Phe Phe Leu Leu His Val Leu Phe Leu Gln Lys
65                  70                  75                  80
Ser Gln Val Lys Cys Phe Trp Gly Thr Leu Gly Gly Gly Asp Lys His
               85                  90                  95
Pro Cys Ala Ala
             100


<210> 5191
<211> 1632
<212> DNA
<213> Homo sapiens
```

```
<400> 5191
tcccgcattt tagaggtgac tggagaactc tcacgtaggc ggccgcccca atttcccgcc
60
cgggtcatcg gggagcccct tcccaagccc cgcaaacacc tgcatgcaaa gaggcaggct
120
tccttctgac agcagataac atgtcgcctg cggcgtcagc aagaggcgca tgcgccttgc
180
cgtgggaggc cgggtgcgca ggactggaac gcggttcctc cttcttcccc gccccgcccc
240
gcttccggcg gaagcggcct caacaaggga aactttattg ttcccgtggg gcagtcgagg
300
atgtcggtga attacgcggc ggggctgtcg ccgtacgcgg acaagggcaa gtgcggcctc
360
ccggagatct tcgacccccc ggaggagctg gagcggaagg tgtgggaact ggcgaggctg
420
gtctggcagt cttccagtgt ggtgttccac acgggtgccg gcatcagcac tgcctctggc
480
atccccgact tcaggggtcc ccacggagtc tggaccatgg aggagcgagg tctggccccc
540
aagttcgaca ccacctttga gagcgcgcgg cccacgcaga cccacatggc gctggtgcag
600
ctggagcgcg tgggcctcct ccgcttcctg gtcagccaga acgtggacgg gctccatgtg
660
cgctcaggct cccccaggga caaactggca gagctccacg ggaacatgtt tgtggaagaa
720
tgtgccaagt gtaagacgca gtacgtccga gacacagtcg tgggcaccat gggcctgaag
780
gccacgggcc ggctctgcac cgtggctaag gcaagggggc tgcgagcctg caggggaggc
840
tgcgaggccc ctgaggactc tcctcagctt cctcattgca ggggagagct gagggacacc
900
atcctagact gggaggactc cctgcccgac cgggacctgg cactcgccga tgaggccagc
960
aggaacgccg acctgtccat cacgctgggt acatcgctgc agatccggcc cagcgggaac
1020
ctgccgctgg ctaccaagcg ccggggaggc cgcctggtca tcgtcaacct gcagcccacc
1080
aagcacgacc gccatgctga cctccgcatc catggctacg ttgacgaggt catgacccgg
1140
ctcatgaagc acctggggct ggagatcccc gcctgggacg ccccggtgt gctggagagg
1200
gcgctgccac ccctgccccg cccgcccacc cccaagctgg agcccaagga ggaatctccc
1260
accggatca acggctctat ccccgccggc cccaagcagg agccctgcgc ccagcacaac
1320
ggctcagagc ccgccagccc caaacgggag cggcccacca gccctgcccc ccacagaccc
1380
cccaaaaggg ggcctctggt gcggttccgg gaagaagcca cacccagag gtgacagctg
1440
agcccctgcc acaccccagc ctctgacttg ctgtgttgtc cagaggtgag gctgggccct
1500
ccctggtctc cagcttaaac aggagtgaac tccctctgtc cccagggcct cccttctggg
1560
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cccccctacag cccacccctac ccctcctcca tgggccctgc aggaggggag acccaccttg
1620
aagtgggggga tc
1632

<210> 5192
<211> 377
<212> PRT
<213> Homo sapiens

<400> 5192
Met Ser Val Asn Tyr Ala Ala Gly Leu Ser Pro Tyr Ala Asp Lys Gly
1   5   10   15
Lys Cys Gly Leu Pro Glu Ile Phe Asp Pro Pro Glu Glu Leu Glu Arg
            20   25   30
Lys Val Trp Glu Leu Ala Arg Leu Val Trp Gln Ser Ser Ser Val Val
        35   40   45
Phe His Thr Gly Ala Gly Ile Ser Thr Ala Ser Gly Ile Pro Asp Phe
    50   55   60
Arg Gly Pro His Gly Val Trp Thr Met Glu Glu Arg Gly Leu Ala Pro
65   70   75   80
Lys Phe Asp Thr Thr Phe Glu Ser Ala Arg Pro Thr Gln Thr His Met
                85   90   95
Ala Leu Val Gln Leu Glu Arg Val Gly Leu Leu Arg Phe Leu Val Ser
            100   105   110
Gln Asn Val Asp Gly Leu His Val Arg Ser Gly Phe Pro Arg Asp Lys
        115   120   125
Leu Ala Glu Leu His Gly Asn Met Phe Val Glu Glu Cys Ala Lys Cys
    130   135   140
Lys Thr Gln Tyr Val Arg Asp Thr Val Val Gly Thr Met Gly Leu Lys
145   150   155   160
Ala Thr Gly Arg Leu Cys Thr Val Ala Lys Ala Arg Gly Leu Arg Ala
                165   170   175
Cys Arg Gly Gly Cys Glu Ala Pro Glu Asp Ser Pro Gln Leu Pro His
            180   185   190
Cys Arg Gly Glu Leu Arg Asp Thr Ile Leu Asp Trp Glu Asp Ser Leu
        195   200   205
Pro Asp Arg Asp Leu Ala Leu Ala Asp Glu Ala Ser Arg Asn Ala Asp
    210   215   220
Leu Ser Ile Thr Leu Gly Thr Ser Leu Gln Ile Arg Pro Ser Gly Asn
225   230   235   240
Leu Pro Leu Ala Thr Lys Arg Arg Gly Gly Arg Leu Val Ile Val Asn
                245   250   255
Leu Gln Pro Thr Lys His Asp Arg His Ala Asp Leu Arg Ile His Gly
            260   265   270
Tyr Val Asp Glu Val Met Thr Arg Leu Met Lys His Leu Gly Leu Glu
        275   280   285
Ile Pro Ala Trp Asp Gly Pro Arg Val Leu Glu Arg Ala Leu Pro Pro
    290   295   300
Leu Pro Arg Pro Pro Thr Pro Lys Leu Glu Pro Lys Glu Glu Ser Pro
305   310   315   320
Thr Arg Ile Asn Gly Ser Ile Pro Ala Gly Pro Lys Gln Glu Pro Cys
                325   330   335
Ala Gln His Asn Gly Ser Glu Pro Ala Ser Pro Lys Arg Glu Arg Pro

```
              340                 345                 350
Thr Ser Pro Ala Pro His Arg Pro Pro Lys Arg Gly Pro Leu Val Arg
        355                 360                 365
Phe Arg Glu Glu Ala Thr Pro Gln Arg
    370                 375
```

<210> 5193
<211> 554
<212> DNA
<213> Homo sapiens

<400> 5193

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acgcgtccct tcccgaggtt ccaggcggac gtgtcccttc ccgaggttct aggcggacat
60
gtcttttgag agggcctcag gttaacccac tactgtgtct gaatctgtcc cttccccaag
120
cagcagctct gtgtcccggc atggccactg tggggcagag acacagcagg tcccacatct
180
ctgtgccctg cagacccgtc agccctgggg atgctggtct gggacggacc cctagatatc
240
acacagccga gaggtaggtc agcgctttaa gatgctgata ccgctggttc agctcctgga
300
gcagaattct cagggtggat ttccagcaac gcctcctggg agggtcagca ggggctgggg
360
tccgtggggt ggtctccggg aggtttgcct gtgtcaggcc tgtgctgctt ctggcggagg
420
cgcttgtcca gcctcatcca gcctggtgtc tccggtgcca cgcgctaaca ccttcagtgc
480
acgctcggga acgcgcctgg aaggccctgc cctgccccgc cccaggctcc agccagatgc
540
tgccagcacc cggg
554
```

<210> 5194
<211> 94
<212> PRT
<213> Homo sapiens

<400> 5194

```
Met Leu Ile Pro Leu Val Gln Leu Leu Glu Gln Asn Ser Gln Gly Gly
1               5                  10                  15
Phe Pro Ala Thr Pro Pro Gly Arg Val Ser Arg Gly Trp Gly Pro Trp
            20                  25                  30
Gly Gly Leu Arg Glu Val Cys Leu Cys Gln Ala Cys Ala Ala Ser Gly
        35                  40                  45
Gly Gly Ala Cys Pro Ala Ser Ser Ser Leu Val Ser Pro Val Pro Arg
    50                  55                  60
Ala Asn Thr Phe Ser Ala Arg Ser Gly Thr Arg Leu Glu Gly Pro Ala
65                  70                  75                  80
Leu Pro Arg Pro Arg Leu Gln Pro Asp Ala Ala Ser Thr Arg
                85                  90
```

<210> 5195
<211> 964

<212> DNA
<213> Homo sapiens

<400> 5195
gggcccaggc tcacagaggt gtgaaagagg caagcacacc gcaggggcct ctgagcccag
60
ccagcctcgc ttcaatgctg ggaggctgac gtcttccttt ttgtcttctg cccaggccag
120
ctgcgggccg tccagcggct gtgccacttc tacagcgccg tcatgcccag cgaggcccag
180
tgtgtcatct accatgagct ccagctctcc ctggcctgca aggtggccga caaggtgctg
240
gaggggcagc tcctggagac catcagccag ctctacctgt ccctgggcac cgagcgggcc
300
tacaaatccg cactggacta caccaaacga agtctgggga ttttcattga cctccagaag
360
aaagagaagg aggcgcatgc ctggctgcaa gcagggaaga tctattacat cttgcggcag
420
agcgagctgg tggacctcta catccaggtg gcacagaacg tggccctgta cacaggcgac
480
cccaacctgg ggctggagct gtttgaggcg ctggagaca tcttcttcga cggggcctgg
540
gagcgggaga aagctgtgtc cttctaccgg gaccgggccc tgcccctggc agtgactacg
600
ggcaaccgca aggcggagct gcggctgtgc aacaagctgg tggcactgct ggccacgctg
660
gaggagcccc aggagggctt ggagtttgcc cacatggccc tagcactcag catcactctg
720
ggggaccggc tgaacgagcg cgtggcctac caccggctgg ccgccctgca acaccgactg
780
ggccatggcg agctggcaga gcacttctac ctcaaggccc tgtcgctctg caactcgccg
840
ctggagtttg acgaggagac cctctactac gtgaaggtgt acctggtgct cggtgacatc
900
atcttctacg acctgaagga cccgtttgat gcagccgggt actaccagct ggcgctggcg
960
gccg
964

<210> 5196
<211> 267
<212> PRT
<213> Homo sapiens

<400> 5196
Met Pro Ser Glu Ala Gln Cys Val Ile Tyr His Glu Leu Gln Leu Ser
1   5   10   15
Leu Ala Cys Lys Val Ala Asp Lys Val Leu Glu Gly Gln Leu Leu Glu
            20   25   30
Thr Ile Ser Gln Leu Tyr Leu Ser Leu Gly Thr Glu Arg Ala Tyr Lys
        35   40   45
Ser Ala Leu Asp Tyr Thr Lys Arg Ser Leu Gly Ile Phe Ile Asp Leu
    50   55   60
Gln Lys Lys Glu Lys Glu Ala His Ala Trp Leu Gln Ala Gly Lys Ile

```
65                    70                    75                    80
Tyr Tyr Ile Leu Arg Gln Ser Glu Leu Val Asp Leu Tyr Ile Gln Val
                85                    90                    95
Ala Gln Asn Val Ala Leu Tyr Thr Gly Asp Pro Asn Leu Gly Leu Glu
            100                   105                   110
Leu Phe Glu Ala Ala Gly Asp Ile Phe Phe Asp Gly Ala Trp Glu Arg
        115                   120                   125
Glu Lys Ala Val Ser Phe Tyr Arg Asp Arg Ala Leu Pro Leu Ala Val
        130                   135                   140
Thr Thr Gly Asn Arg Lys Ala Glu Leu Arg Leu Cys Asn Lys Leu Val
145                   150                   155                   160
Ala Leu Leu Ala Thr Leu Glu Glu Pro Gln Glu Gly Leu Glu Phe Ala
                165                   170                   175
His Met Ala Leu Ala Leu Ser Ile Thr Leu Gly Asp Arg Leu Asn Glu
            180                   185                   190
Arg Val Ala Tyr His Arg Leu Ala Ala Leu Gln His Arg Leu Gly His
        195                   200                   205
Gly Glu Leu Ala Glu His Phe Tyr Leu Lys Ala Leu Ser Leu Cys Asn
    210                   215                   220
Ser Pro Leu Glu Phe Asp Glu Glu Thr Leu Tyr Tyr Val Lys Val Tyr
225                   230                   235                   240
Leu Val Leu Gly Asp Ile Ile Phe Tyr Asp Leu Lys Asp Pro Phe Asp
                245                   250                   255
Ala Ala Gly Tyr Tyr Gln Leu Ala Leu Ala Ala
            260                   265
```

```
<210> 5197
<211> 1045
<212> DNA
<213> Homo sapiens

<400> 5197
natgttggtc aggctggtct caaactcctg acctcgtgat ccgcccacct cagcctcgca
60
aagtgctggg attacaggcg tgagccacca tgttggtcag tctggtctca nactcctgtc
120
ctcatgatcc gcccacctca gcctcgcaaa gtgctgggat tacaggcatg agccaccacg
180
tccggccacc actgactttt tcattctttc tcattcttcc tgggccctcc tgctgttgta
240
ggcccccatg aagaagtgga ctattctgag aaactgaagt tcagtgatga tgaagaggag
300
gaagaagttg tgaaggacgg caggccaaag tggaacagtt gggaccctag gaggcagcgg
360
cagttgtcaa tgagctctgc agacagtgcg gacgctaagc ggactcgaga ggaagggaag
420
gactgggctg aagcagtggg tgcgtcccgt gtggtccgaa aggcgccaga ccctcagcca
480
ccgcccagga agcttcatgg ctgggcacca ggccctgact accagaagtc atcaatgggc
540
agcatgttcc ggcaacagtc catcgaggac aaggaggaca agcccccacc aaggcagaag
600
ttcattcagt cagagatgtc cgaggcggtg gagcgagccc gaaagcgccg ggaagaagag
660
```

gagcgccgag cccgggagga gaggctggcc gcctgtgctg ccaaactcaa gcagctggac
720

cagaagtgta agcaggcacg aaaggcaggt gaggcccgga agcaggcaga gaaggaagtg
780

ccctggtctc caagtgctga gaaggcatct ccccaggaaa acggccctgc tgtccacaaa
840

ggctccccag aattccctgc ccaagagacc cccaccacat tcccagaaga ggcacccaca
900

gtgtccccag cagtggcaca gagcaacagc agtgaggaag aggccagaga ggctgggtcc
960

cctgcacagg agttcaagta tcagaagtcc cttcctcccc gattccagcg ccagcagcag
1020

caacaacagc aggagcagct gtaca
1045

<210> 5198
<211> 283
<212> PRT
<213> Homo sapiens

<400> 5198
Leu Phe His Ser Phe Ser Phe Phe Leu Gly Pro Pro Ala Val Val Gly
1   5   10   15
Pro His Glu Glu Val Asp Tyr Ser Glu Lys Leu Lys Phe Ser Asp Asp
            20   25   30
Glu Glu Glu Glu Glu Val Val Lys Asp Gly Arg Pro Lys Trp Asn Ser
            35   40   45
Trp Asp Pro Arg Arg Gln Arg Gln Leu Ser Met Ser Ser Ala Asp Ser
        50   55   60
Ala Asp Ala Lys Arg Thr Arg Glu Glu Gly Lys Asp Trp Ala Glu Ala
65   70   75   80
Val Gly Ala Ser Arg Val Val Arg Lys Ala Pro Asp Pro Gln Pro Pro
                85   90   95
Pro Arg Lys Leu His Gly Trp Ala Pro Gly Pro Asp Tyr Gln Lys Ser
            100   105   110
Ser Met Gly Ser Met Phe Arg Gln Gln Ser Ile Glu Asp Lys Glu Asp
            115   120   125
Lys Pro Pro Pro Arg Gln Lys Phe Ile Gln Ser Glu Met Ser Glu Ala
        130   135   140
Val Glu Arg Ala Arg Lys Arg Arg Glu Glu Glu Glu Arg Arg Ala Arg
145   150   155   160
Glu Glu Arg Leu Ala Ala Cys Ala Ala Lys Leu Lys Gln Leu Asp Gln
                165   170   175
Lys Cys Lys Gln Ala Arg Lys Ala Gly Glu Ala Arg Lys Gln Ala Glu
            180   185   190
Lys Glu Val Pro Trp Ser Pro Ser Ala Glu Lys Ala Ser Pro Gln Glu
            195   200   205
Asn Gly Pro Ala Val His Lys Gly Ser Pro Glu Phe Pro Ala Gln Glu
        210   215   220
Thr Pro Thr Thr Phe Pro Glu Glu Ala Pro Thr Val Ser Pro Ala Val
225   230   235   240
Ala Gln Ser Asn Ser Ser Glu Glu Glu Ala Arg Glu Ala Gly Ser Pro
                245   250   255
Ala Gln Glu Phe Lys Tyr Gln Lys Ser Leu Pro Pro Arg Phe Gln Arg

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              260              265                270
Gln Gln Gln Gln Gln Gln Gln Glu Gln Leu Tyr
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<210> 5199
<211> 1332
<212> DNA
<213> Homo sapiens
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<400> 5199
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cagccgctga ggtgactttc aacggcagac cgtctcctga gcgccccagg tagaatttca
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1140
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1200
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1320
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1332

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<212> PRT
<213> Homo sapiens

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            20   25   30
Leu Thr Ala Trp Gly Glu Asp Gly Thr Pro Leu Gly His Thr Arg Phe
        35   40   45
Gln Gly Ala Asp Asp Val Thr Ser Val Leu Phe Ser Pro Ser Cys Pro
    50   55   60
Thr Lys Leu Tyr Ala Ser His Gly Glu Thr Ile Ser Val Leu Asp Val
65   70   75   80
Arg Ser Leu Lys Asp Ser Leu Asp His Phe His Val Asn Glu Glu Glu
                85   90   95
Ile Asn Cys Leu Ser Leu Asn Gln Thr Glu Asn Leu Leu Ala Ser Ala
            100   105   110
Asp Asp Ser Gly Ala Ile Lys Ile Leu Asp Leu Glu Asn Lys Lys Val
        115   120   125
Ile Arg Ser Leu Lys Arg His Ser Asn Ile Cys Ser Ser Val Ala Phe
    130   135   140
Arg Pro Gln Arg Pro Gln Ser Leu Val Ser Cys Gly Leu Asp Met Gln
145   150   155   160
Val Met Leu Trp Ser Leu Gln Lys Ala Arg Pro Leu Trp Ile Thr Asn
                165   170   175
Leu Gln Glu Asp Glu Thr Glu Glu Met Glu Gly Pro Gln Ser Pro Gly
            180   185   190
Gln Leu Leu Asn Pro Ala Leu Ala His Ser Ile Ser Val Ala Ser Cys
        195   200   205
Gly Asn Ile Phe Ser Cys Gly Ala Glu Asp Gly Lys Val Arg Ile Phe
    210   215   220
Arg Val Met Gly Val Lys Cys Glu Gln Glu Leu Gly Phe Lys Gly His
225   230   235   240
Thr Ser Gly Val Ser Gln Val Cys Phe Leu Pro Glu Ser Tyr Leu Leu
                245   250   255
Leu Thr Gly Gly Asn Asp Gly Lys Ile Thr Leu Trp Asp Ala Asn Ser
            260   265   270
Glu Val Glu Lys Lys Gln Lys Ser Pro Thr Lys Arg Thr His Arg Lys
        275   280   285
Lys Pro Lys Arg Gly Thr Cys Thr Lys Gln Gly Gly Asn Thr Asn Ala
    290   295   300
Ser Val Thr Asp Glu Glu Glu His Gly Asn Ile Leu Pro Lys Leu Asn
305   310   315   320
Ile Glu His Gly Glu Lys Val Asn Trp Leu Leu Gly Thr Lys Ile Lys
                325   330   335
Gly His Gln Asn Ile Leu Val Ala Asp Gln Thr Ser Cys Ile Ser Val
            340   345   350
Tyr Pro Leu Asn Glu Phe

355

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<212> DNA
<213> Homo sapiens

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120
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180
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240
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300
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360
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420
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1200
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1260
acggacgggc ccctcctgga gcccataccc tcctgtgagg ccattccagt gtcttctaga
1320
aagactcgct tgccaggagt gcgttctttg ttgaaaaatg ccctgaagcg aaaagatgca
1380
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3000
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4620

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<211> 108
<212> PRT
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<213> Homo sapiens

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Val Ala Val Gly Gly Gln Val His Cys Pro Glu Val Leu Ser Ala Leu
            20   25   30
Ser Gln Gly Ser Leu Glu Arg Gly Leu Ala Gly Leu Gly Gly His Arg
        35   40   45
Pro His Ser Gly Leu Pro Ala Gln Gly Arg Arg Pro Glu Pro Val Trp
    50   55   60
Pro Cys Ser Pro Gly Gln Ser Trp Ala Cys Arg Val Phe Leu Pro Gly
65   70   75   80
Arg Cys Arg Cys Trp Pro Ser Ala Gly Gly Arg Arg Trp Glu Ser Trp
                85   90   95
Ile Phe Cys Phe Phe Leu Ser Phe Phe Phe Leu Arg
            100   105

<210> 5203
<211> 1863
<212> DNA
<213> Homo sapiens

<400> 5203
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120
cttcaggcaa cagctgaagc taataatctt gctgcagtag caggagcaag agatacctat
180
tgtaaaagta tggaacaggt atgtggaggg gacaagcctt acattgcacc ttcagatctg
240
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720
tctcatcatg ccagattaaa gacagactga cagttcatct cctcacggac tccactctct
780
ttttttttca tgcttgctgt acaatgagaa ctcaaataaa aataaaccaa agtttacaat
840
caactgtaga agtagtttag tgtaactggc ttcacagatg gctgccacag agtgtgaaga
900

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1020
ctaatgttag tgaatttgtc ttatgtaaaa ggatatttca gggaaatatt ttcagaaatc
1080
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1140
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1200
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1320
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1380
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1500
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1560
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1620
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1680
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<210> 5204
<211> 249
<212> PRT
<213> Homo sapiens
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                20                  25                  30
Glu Leu Pro His Pro Lys Ser Met Leu Gln Ala Thr Ala Glu Ala Asn
         35                  40                  45
Asn Leu Ala Ala Val Ala Gly Ala Arg Asp Thr Tyr Cys Lys Ser Met
     50                  55                  60
Glu Gln Val Cys Gly Gly Asp Lys Pro Tyr Ile Ala Pro Ser Asp Leu
65                  70                  75                  80
Glu Arg Lys His Leu Asp Leu Lys Glu Val Ala Ile Lys Gln Phe Arg
                85                  90                  95
Ser Val Lys Lys Met Gly Gly Asp Glu Phe Cys Arg Arg Tyr Gln Asp
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                 100                    105                    110
Gln Leu Glu Ala Glu Ile Glu Glu Thr Tyr Ala Asn Phe Ile Lys His
            115                    120                    125
Asn Asp Gly Lys Asn Ile Phe Tyr Ala Ala Arg Thr Pro Ala Thr Leu
        130                    135                    140
Phe Ala Val Met Phe Ala Met Tyr Ile Ile Ser Gly Leu Thr Gly Phe
145                    150                    155                    160
Ile Gly Leu Asn Ser Ile Ala Val Leu Cys Asn Leu Val Met Gly Leu
                165                    170                    175
Ala Leu Ile Phe Leu Cys Thr Trp Ala Tyr Val Lys Tyr Ser Gly Glu
                180                    185                    190
Phe Arg Glu Ile Gly Thr Val Ile Asp Gln Ile Ala Glu Thr Leu Trp
            195                    200                    205
Glu Gln Val Leu Lys Pro Leu Gly Asp Asn Leu Met Glu Glu Asn Ile
        210                    215                    220
Arg Gln Ser Val Thr Asn Ser Ile Lys Ala Gly Leu Thr Asp Gln Val
225                    230                    235                    240
Ser His His Ala Arg Leu Lys Thr Asp
                245
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<210> 5205
<211> 2011
<212> DNA
<213> Homo sapiens

<400> 5205
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240
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780
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840
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2011

<210> 5206
<211> 248
<212> PRT
<213> Homo sapiens

<400> 5206
His Ser Leu Ala Ser Val Leu Ser Ser Pro Gly His Pro Ser Arg His
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Val Ala Lys Ala Phe Arg Val Lys Ser Asn Thr Ala Ile Lys Gly Ser
            20   25   30
Asp Arg Arg Lys Leu Arg Ala Asp Val Thr Thr Ala Phe Pro Thr Leu
        35   40   45
Gly Thr Asp Gln Val Ser Glu Leu Val Pro Gly Lys Glu Glu Leu Asn

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      50                     55                     60
Ile Val Lys Leu Tyr Ala His Lys Gly Asp Ala Val Thr Val Tyr Val
65                     70                     75                     80
Ser Gly Gly Asn Pro Ile Leu Phe Glu Leu Glu Lys Asn Leu Tyr Pro
                 85                     90                     95
Thr Val Tyr Thr Leu Trp Ser Tyr Pro Asp Leu Leu Pro Thr Phe Thr
                 100                    105                    110
Thr Trp Pro Leu Val Leu Glu Lys Leu Val Gly Gly Ala Asp Leu Met
             115                    120                    125
Leu Pro Gly Leu Val Met Pro Pro Ala Gly Leu Pro Gln Val Gln Lys
         130                    135                    140
Gly Asp Leu Cys Ala Ile Ser Leu Val Gly Asn Arg Ala Pro Val Ala
145                    150                    155                    160
Ile Gly Val Ala Ala Met Ser Thr Ala Glu Met Leu Thr Ser Gly Leu
                 165                    170                    175
Lys Gly Arg Gly Phe Ser Val Leu His Thr Tyr Gln Asp His Leu Trp
                 180                    185                    190
Arg Ser Gly Asn Lys Ser Ser Pro Pro Ser Ile Ala Pro Leu Ala Leu
             195                    200                    205
Asp Ser Ala Asp Leu Ser Glu Glu Lys Gly Ser Val Gln Met Asp Ser
         210                    215                    220
Thr Leu Gln Gly Asp Met Arg His Met Thr Leu Glu Gly Glu Glu Glu
225                    230                    235                    240
Asn Gly Glu Val His Gln Gly Thr
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<210> 5207
<211> 594
<212> DNA
<213> Homo sapiens

<400> 5207
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120
ggaatatgca gcccggggga gccccagaca gcggcaagga cgaggtggcg gagtggggcg
180
ggaggcatgg tctccaccta ccgggtggcc gtgctggggg cgcgaggtgt gggcaagagt
240
gccatcgtgc gccagttctt gtacaacgag ttcagcgagg tctgcgtccc caccaccgcc
300
cgccgccttt acctgcctgc tgtcgtcatg aacggccacg tgcacgacct ccagatcctc
360
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420
tgcaggggac tccggagtgt ccacgcctac atcctggtct acgacatctg ctgctttgac
480
agctttgagt acgtcaagac catccgccag cagatcctgg agacgagggt gatcggaacc
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594

<210> 5208
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<211> 136
<212> PRT
<213> Homo sapiens

<400> 5208
Met Val Ser Thr Tyr Arg Val Ala Val Leu Gly Ala Arg Gly Val Gly
1   5   10   15
Lys Ser Ala Ile Val Arg Gln Phe Leu Tyr Asn Glu Phe Ser Glu Val
                20   25   30
Cys Val Pro Thr Thr Ala Arg Arg Leu Tyr Leu Pro Ala Val Val Met
            35   40   45
Asn Gly His Val His Asp Leu Gln Ile Leu Asp Phe Pro Pro Ile Ser
        50   55   60
Ala Phe Pro Val Asn Thr Leu Gln Glu Trp Ala Asp Thr Cys Cys Arg
65   70   75   80
Gly Leu Arg Ser Val His Ala Tyr Ile Leu Val Tyr Asp Ile Cys Cys
                85   90   95
Phe Asp Ser Phe Glu Tyr Val Lys Thr Ile Arg Gln Gln Ile Leu Glu
            100   105   110
Thr Arg Val Ile Gly Thr Ser Glu Thr Pro Ile Ile Ile Val Gly Asn
            115   120   125
Lys Arg Asp Leu Gln Arg Gly Arg
        130   135

<210> 5209
<211> 1592
<212> DNA
<213> Homo sapiens

<400> 5209
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ctggaacgcc aggtggagga gctgcgctgg cgccagaggc gagcggccaa gggggcccgc
240
agtgtggagg aggagtgagc cggatgcccc acacaccgcc agtgtcatac caaagagctg
300
agctgcttcg gggccatgca gccctcctgc cagccccctg cccttttctt gccctgtctc
360
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420
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480
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540
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600
cttccctctg ctgctgcctt ggcttcctcc taatgctcgt gctctcctgt ccttctgaag
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720

cccaccaaac catggtcctt taaggcacgc tcctgtcctc ctcattgccc agcagtaggg
780
aggggcaggg gtaaggggac ctgaggataa agggtgggga aacagggtcc cctgaggcct
840
gtgggggctg caggggagga ggatgtacct tgtgtctctt tcaagtgcct taatccgagc
900
cagcagggcc ttctgcttgc ctgctgccat actgtatgta ggaaagtgtt ctgtggctgc
960
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1020
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1200
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1320
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1380
acatgatgtg aagaataaat gcccaattct tactgttcag gtttgatgtg gaatcacagc
1440
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1592

<210> 5210
<211> 85
<212> PRT
<213> Homo sapiens

<400> 5210
Ile Leu Trp Gly Leu Lys Leu Val Ile Phe Leu Ala Gly Phe Val Ala
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Leu Met Arg Ser Val Pro Asp Pro Ser Thr Arg Ala Leu Leu Leu Leu
            20   25   30
Ala Leu Leu Ile Leu Tyr Ala Leu Leu Ser Arg Leu Thr Gly Ser Arg
        35   40   45
Ala Ser Gly Ala Gln Leu Glu Ala Lys Val Arg Gly Leu Glu Arg Gln
    50   55   60
Val Glu Glu Leu Arg Trp Arg Gln Arg Arg Ala Ala Lys Gly Ala Arg
65   70   75   80
Ser Val Glu Glu Glu
                85

<210> 5211
<211> 602
<212> DNA
<213> Homo sapiens

<400> 5211

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120
gcacaggacc agacaacaag ttttttaaaaa tgatgccaga gcattagaag cagccagaat
180
aaagataaat gaagaattca aaataataa aagtgaaact tcttctaaga aaatagaaga
240
gctaatgaaa ataggttctg atgttgaatt attactcaga acatctgtta tacaaggtat
300
tcacacagac cacaatacac tgaaactggt ccctaggaaa gaccttcttg tagaaaatgt
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gccatattgt gatgcaccaa ctcagaagca atgagttttc tagaatacaa caagtctttg
420
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602

<210> 5212
<211> 104
<212> PRT
<213> Homo sapiens

<400> 5212

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Met Gly Arg Ala Val Lys Val Leu Gln Leu Phe Lys Thr Leu His Arg
 1               5                  10                  15
Thr Arg Gln Gln Val Phe Lys Asn Asp Ala Arg Ala Leu Glu Ala Ala
            20                  25                  30
Arg Ile Lys Ile Asn Glu Glu Phe Lys Asn Asn Lys Ser Glu Thr Ser
        35                  40                  45
Ser Lys Lys Ile Glu Glu Leu Met Lys Ile Gly Ser Asp Val Glu Leu
    50                  55                  60
Leu Leu Arg Thr Ser Val Ile Gln Gly Ile His Thr Asp His Asn Thr
65                  70                  75                  80
Leu Lys Leu Val Pro Arg Lys Asp Leu Leu Val Glu Asn Val Pro Tyr
                85                  90                  95
Cys Asp Ala Pro Thr Gln Lys Gln
                100
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<210> 5213
<211> 4387
<212> DNA
<213> Homo sapiens

<400> 5213

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120
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240
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1440
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1560
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1680

4391

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3300
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4387

<210> 5214
<211> 1364
<212> PRT
<213> Homo sapiens

<400> 5214
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Val Ile Glu Glu Ala Phe Pro Gly Met Phe Met Asp Thr Pro Glu Asp
            20   25   30
Glu Lys Thr Lys Leu Ile Ser Cys Leu Gly Ala Phe Arg Gln Phe Trp
            35   40   45
Gly Gly Leu Ser Gln Glu Ser His Glu Gln Cys Ile Gln Trp Ile Val
        50   55   60
Lys Phe Ile His Gly Gln His Ser Pro Lys Arg Ile Ser Phe Leu Tyr

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65                      70                      75                      80
Asp Cys Leu Ala Met Ala Val Glu Thr Gly Leu Leu Pro Pro Arg Leu
                85                      90                      95
Val Cys Glu Ser Leu Ile Asn Ser Asp Thr Leu Glu Trp Glu Arg Thr
                100                     105                     110
Gln Leu Trp Ala Leu Thr Phe Lys Leu Val Arg Lys Ile Ile Gly Gly
            115                     120                     125
Val Asp Tyr Lys Gly Val Arg Asp Leu Leu Lys Val Ile Leu Glu Lys
        130                     135                     140
Ile Leu Thr Ile Pro Asn Thr Val Ser Ser Ala Val Val Gln Gln Leu
145                     150                     155                     160
Leu Ala Ala Arg Glu Val Ile Ala Tyr Ile Leu Glu Arg Asn Ala Cys
                165                     170                     175
Leu Leu Pro Ala Tyr Phe Ala Val Thr Glu Ile Arg Lys Leu Tyr Pro
                180                     185                     190
Glu Gly Lys Leu Pro His Trp Leu Leu Gly Asn Leu Val Ser Asp Phe
            195                     200                     205
Val Asp Thr Phe Arg Pro Thr Ala Arg Ile Asn Ser Ile Cys Gly Arg
        210                     215                     220
Cys Ser Leu Leu Pro Val Val Asn Asn Ser Gly Ala Ile Cys Asn Ser
225                     230                     235                     240
Trp Lys Leu Asp Pro Ala Thr Leu Arg Phe Pro Leu Lys Gly Leu Leu
                245                     250                     255
Pro Tyr Asp Lys Asp Leu Phe Glu Pro Gln Thr Ala Leu Leu Arg Tyr
            260                     265                     270
Val Leu Glu Gln Pro Tyr Ser Arg Asp Met Val Cys Asn Met Leu Gly
        275                     280                     285
Leu Asn Lys Gln His Lys Gln Arg Cys Pro Val Leu Glu Asp Gln Leu
        290                     295                     300
Val Asp Leu Val Val Tyr Ala Met Glu Arg Ser Glu Thr Glu Glu Lys
305                     310                     315                     320
Phe Asp Asp Gly Gly Thr Ser Gln Leu Leu Trp Gln His Leu Ser Ser
            325                     330                     335
Gln Leu Ile Phe Phe Val Leu Phe Gln Phe Ala Ser Phe Pro His Met
            340                     345                     350
Val Leu Ser Leu His Gln Lys Leu Ala Gly Arg Gly Leu Ile Lys Gly
            355                     360                     365
Arg Asp His Leu Met Trp Val Leu Leu Gln Phe Ile Ser Gly Ser Ile
            370                     375                     380
Gln Lys Asn Ala Leu Ala Asp Phe Leu Pro Val Met Lys Leu Phe Asp
385                     390                     395                     400
Leu Leu Tyr Pro Glu Lys Glu Tyr Ile Pro Val Pro Asp Ile Asn Lys
            405                     410                     415
Pro Gln Ser Thr His Ala Phe Ala Met Thr Cys Ile Trp Ile His Leu
            420                     425                     430
Asn Arg Lys Ala Gln Asn Asp Asn Ser Lys Leu Gln Ile Pro Ile Pro
            435                     440                     445
His Ser Leu Arg Leu His His Glu Phe Leu Gln Gln Ser Leu Arg His
        450                     455                     460
Lys Ser Leu Gln Met Asn Asp Tyr Lys Ile Ala Leu Leu Cys Asn Ala
465                     470                     475                     480
Tyr Ser Thr Asn Ser Glu Cys Val Thr Leu Pro Met Gly Ala Leu Val
                485                     490                     495
Glu Thr Ile Tyr Gly Asn Gly Ile Met Arg Leu Pro Leu Pro Gly Thr
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Asn Cys Met Ala Ser Ala Ser Ile Thr Pro Leu Pro Met Asn Leu Leu
        515                      520                  525
Asp Ser Leu Thr Val His Ala Lys Met Ser Leu Ile His Ser Ile Ala
    530                      535                  540
Thr Arg Val Ile Lys Leu Ala His Ala Lys Ser Ser Val Ala Leu Ala
545                      550                  555                  560
Pro Ala Leu Val Glu Thr Tyr Ser Arg Leu Leu Val Tyr Met Glu Ile
                565                      570                  575
Glu Ser Leu Gly Ile Lys Gly Phe Ile Ser Gln Leu Leu Pro Thr Val
            580                      585                  590
Phe Lys Ser His Ala Trp Gly Ile Leu His Thr Leu Leu Glu Met Phe
            595                      600                  605
Ser Tyr Arg Met His His Ile Gln Pro His Tyr Arg Val Gln Leu Leu
    610                      615                  620
Ser His Leu His Thr Leu Ala Ala Val Ala Gln Thr Asn Gln Asn Gln
625                      630                  635                  640
Leu His Leu Cys Val Glu Ser Thr Ala Leu Arg Leu Ile Thr Ala Leu
            645                      650                  655
Gly Ser Ser Glu Val Gln Pro Gln Phe Thr Arg Phe Leu Ser Asp Pro
            660                      665                  670
Lys Thr Val Leu Ser Ala Glu Ser Glu Glu Leu Asn Arg Ala Leu Ile
            675                      680                  685
Leu Thr Leu Ala Arg Ala Thr His Val Thr Asp Phe Phe Thr Gly Ser
    690                      695                  700
Asp Ser Ile Gln Gly Thr Trp Cys Lys Asp Ile Leu Gln Thr Ile Met
705                      710                      715                  720
Ser Phe Thr Pro His Asn Trp Ala Ser His Thr Leu Ser Cys Phe Pro
                725                      730                  735
Gly Pro Leu Gln Ala Phe Phe Lys Gln Asn Asn Val Pro Gln Glu Ser
            740                      745                  750
Arg Phe Asn Leu Lys Lys Asn Val Glu Glu Glu Tyr Arg Lys Trp Lys
            755                      760                  765
Ser Met Ser Asn Glu Asn Asp Ile Ile Thr His Phe Ser Met Gln Gly
    770                      775                  780
Ser Pro Pro Leu Phe Leu Cys Leu Leu Trp Lys Met Leu Leu Glu Thr
785                      790                      795                  800
Asp His Ile Asn Gln Ile Gly Tyr Arg Val Leu Glu Arg Ile Gly Ala
            805                      810                  815
Arg Ala Leu Val Ala His Val Arg Thr Phe Ala Asp Phe Leu Val Tyr
        820                      825                  830
Glu Phe Ser Thr Ser Ala Gly Gly Gln Gln Leu Asn Lys Cys Ile Glu
        835                      840                  845
Ile Leu Asn Asp Met Val Trp Lys Tyr Asn Ile Val Thr Leu Asp Arg
    850                      855                  860
Leu Ile Leu Cys Leu Ala Met Arg Ser His Glu Gly Asn Glu Ala Gln
865                      870                  875                  880
Val Cys Tyr Phe Ile Ile Gln Leu Leu Leu Leu Lys Pro Asn Asp Phe
                885                      890                  895
Arg Asn Arg Val Ser Asp Phe Val Lys Glu Asn Ser Pro Glu His Trp
        900                      905                  910
Leu Gln Asn Asp Trp His Thr Lys His Met Asn Tyr His Lys Lys Tyr
    915                      920                  925
Pro Glu Lys Leu Tyr Phe Glu Gly Leu Ala Glu Gln Val Asp Pro Pro
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              930                   935                   940
Val Gln Ile Gln Ser Pro Tyr Leu Pro Ile Tyr Phe Gly Asn Val Cys
945                   950                   955                   960
Leu Arg Phe Leu Pro Val Phe Asp Ile Val Ile His Arg Phe Leu Glu
                  965                   970                   975
Leu Leu Pro Val Ser Lys Ser Leu Glu Thr Leu Leu Asp His Leu Gly
                  980                   985                   990
Gly Leu Tyr Lys Phe His Asp Arg Pro Val Thr Tyr Leu Tyr Asn Thr
                  995                  1000                  1005
Leu His Tyr Tyr Glu Met His Leu Arg Asp Arg Ala Phe Leu Lys Arg
             1010                  1015                  1020
Lys Leu Val His Ala Ile Ile Gly Ser Leu Lys Asp Asn Arg Pro Gln
1025                  1030                  1035                  1040
Gly Trp Cys Leu Ser Asp Thr Tyr Leu Lys Cys Ala Met Asn Ala Arg
                 1045                  1050                  1055
Glu Glu Asn Pro Trp Val Pro Asp Asp Thr Tyr Tyr Cys Arg Leu Ile
                 1060                  1065                  1070
Gly Arg Leu Val Asp Thr Met Ala Gly Lys Ser Pro Gly Pro Phe Pro
                 1075                  1080                  1085
Asn Cys Asp Trp Arg Phe Asn Glu Phe Pro Asn Pro Ala Ala His Ala
                 1090                  1095                  1100
Leu His Val Thr Cys Val Glu Leu Met Ala Leu Ala Val Ser Gly Lys
1105                  1110                  1115                  1120
Glu Val Gly Asn Ala Leu Leu Asn Val Val Leu Lys Ser Gln Pro Leu
                 1125                  1130                  1135
Val Pro Arg Glu Asn Ile Thr Ala Trp Met Asn Ala Ile Gly Leu Ile
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Ile Thr Ala Leu Pro Glu Pro Tyr Trp Ile Val Leu His Asp Arg Ile
                 1155                  1160                  1165
Val Ser Val Ile Ser Ser Pro Ser Leu Thr Ser Glu Thr Glu Trp Val
                 1170                  1175                  1180
Gly Tyr Pro Phe Arg Leu Phe Asp Phe Thr Ala Cys His Gln Ser Tyr
1185                  1190                  1195                  1200
Ser Glu Met Ser Cys Ser Tyr Thr Leu Ala Leu Ala His Ala Val Trp
                 1205                  1210                  1215
His His Ser Ser Ile Gly Gln Leu Ser Leu Ile Pro Lys Phe Leu Thr
                 1220                  1225                  1230
Glu Val Leu Leu Pro Ile Val Lys Thr Glu Phe Gln Leu Leu Tyr Val
                 1235                  1240                  1245
Tyr His Leu Val Gly Pro Phe Leu Gln Arg Phe Gln Gln Glu Arg Thr
                 1250                  1255                  1260
Arg Cys Met Ile Glu Ile Gly Val Ala Phe Tyr Asp Met Leu Leu Asn
1265                  1270                  1275                  1280
Val Asp Gln Cys Ser Thr His Leu Asn Tyr Met Asp Pro Ile Cys Asp
                 1285                  1290                  1295
Phe Leu Tyr His Met Lys Tyr Met Phe Thr Gly Asp Ser Val Lys Glu
                 1300                  1305                  1310
Gln Val Glu Lys Ile Ile Cys Asn Leu Lys Pro Ala Leu Lys Leu Arg
                 1315                  1320                  1325
Leu Arg Phe Ile Thr His Ile Ser Lys Met Glu Pro Ala Ala Val Pro
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Pro Gln Ala Met Asn Ser Gly Ser Pro Ala Pro Gln Ser Asn Gln Val
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Asp Thr Leu Thr
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<210> 5215
<211> 548
<212> DNA
<213> Homo sapiens

<400> 5215
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240
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300
aagaacttgg aacagcccgg aacctcggtt gatgaagccg cggccgggnt tgagaggacc
360
gactgcagtt ctgaaagacg ttctgctgtg ggttcaatgc tatcagacag catcacgccc
420
cacagagaaa tctttcatga aaggaagagt ccatcgctgt ggccaacttt tttgtggtca
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540
acattgag
548


<210> 5216
<211> 83
<212> PRT
<213> Homo sapiens

<400> 5216
Ala Gly Glu Leu Leu Gln Leu Arg Ser Ser Pro Ser Glu Asp Ser Val
1               5                   10                  15
Asn Leu Gly Val Met Arg Thr Lys Asn Leu Glu Gln Pro Gly Thr Ser
            20                  25                  30
Val Asp Glu Ala Ala Ala Gly Xaa Glu Arg Thr Asp Cys Ser Ser Glu
        35                  40                  45
Arg Arg Ser Ala Val Gly Ser Met Leu Ser Asp Ser Ile Thr Pro His
    50                  55                  60
Arg Glu Ile Phe His Glu Arg Lys Ser Pro Ser Leu Trp Pro Thr Phe
65                  70                  75                  80
Leu Trp Ser


<210> 5217
<211> 4189
<212> DNA
<213> Homo sapiens

<400> 5217
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180
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240
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300
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360
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420
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1620

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3240
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4189

<210> 5218
<211> 541
<212> PRT
<213> Homo sapiens

<400> 5218
Met Ala Gly Asp Arg Ala Arg Trp Trp Thr Met Ala Trp Ser Thr Gly
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Ser Trp Ala Met Gly Ser Leu Arg Pro Glu Ala Pro Leu Leu Ser Ser
            20   25   30
Ser Thr Leu Arg Cys Cys Ser Gly Asn Ser Ser Asp Trp Leu Gly Gly
            35   40   45
Ser Pro Gly Ala Ala Pro Gly Thr Leu Cys Cys Phe Leu Trp Pro Arg
        50   55   60
Val Gly Thr Gly Leu Cys Pro Gly Leu Ser Leu Pro Gln Pro His Leu
65   70   75   80
Pro His Cys Gln Pro Gln Ser Leu Pro Ala Xaa Ala Arg Val Leu Ser
                85   90   95
Ser Ser Glu Thr Pro Ala Arg Thr Leu Pro Phe Thr Thr Gly Leu Ile
            100   105   110
Tyr Asp Ser Val Met Leu Lys His Gln Cys Ser Cys Gly Asp Asn Ser

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              115                      120                      125
Arg His Pro Glu His Ala Gly Arg Ile Gln Ser Ile Trp Ser Arg Leu
    130                      135                      140
Gln Glu Arg Gly Leu Arg Ser Gln Cys Glu Cys Leu Arg Gly Arg Lys
145                      150                      155                      160
Ala Ser Leu Glu Glu Leu Gln Ser Val His Ser Glu Arg His Val Leu
                  165                      170                      175
Leu Tyr Gly Thr Asn Pro Leu Ser Arg Leu Lys Leu Asp Asn Gly Lys
              180                      185                      190
Leu Ala Gly Leu Leu Ala Gln Arg Met Phe Val Met Leu Pro Cys Gly
          195                      200                      205
Gly Val Gly Val Asp Thr Asp Thr Ile Trp Asn Glu Leu His Ser Ser
    210                      215                      220
Asn Ala Ala Arg Trp Ala Ala Gly Ser Val Thr Asp Leu Ala Phe Lys
225                      230                      235                      240
Val Ala Ser Arg Glu Leu Lys Asn Gly Phe Ala Val Val Arg Pro Pro
                  245                      250                      255
Gly His His Ala Asp His Ser Thr Ala Met Gly Phe Cys Phe Phe Asn
                  260                      265                      270
Ser Val Ala Ile Ala Cys Arg Gln Leu Gln Gln Gln Ser Lys Ala Ser
          275                      280                      285
Lys Ile Leu Ile Val Asp Trp Asp Val His His Gly Asn Ala Thr Gln
    290                      295                      300
Gln Thr Phe Tyr Gln Asp Pro Ser Val Leu Tyr Ile Ser Leu His Arg
305                      310                      315                      320
His Asp Asp Gly Asn Phe Phe Pro Gly Ser Gly Ala Val Asp Glu Val
                  325                      330                      335
Gly Ala Gly Ser Gly Glu Gly Phe Asn Val Asn Val Ala Trp Ala Gly
              340                      345                      350
Gly Leu Asp Pro Pro Met Gly Asp Pro Glu Tyr Leu Ala Ala Phe Arg
          355                      360                      365
Ile Val Val Met Pro Ile Ala Arg Glu Phe Ser Pro Asp Leu Val Leu
    370                      375                      380
Val Ser Ala Gly Phe Asp Ala Ala Glu Gly His Pro Ala Pro Leu Gly
385                      390                      395                      400
Gly Tyr His Val Ser Ala Lys Cys Phe Gly Tyr Met Thr Gln Gln Leu
                  405                      410                      415
Met Asn Leu Ala Gly Gly Ala Val Val Leu Ala Leu Glu Gly Gly His
              420                      425                      430
Asp Leu Thr Ala Ile Cys Asp Ala Ser Glu Ala Cys Val Ala Ala Leu
          435                      440                      445
Leu Gly Asn Arg Val Asp Pro Leu Ser Glu Glu Gly Trp Lys Gln Lys
    450                      455                      460
Pro Asn Leu Asn Ala Ile Arg Ser Leu Glu Ala Val Ile Arg Val His
465                      470                      475                      480
Ser Lys Tyr Trp Gly Cys Met Gln Arg Leu Ala Ser Cys Pro Asp Ser
                  485                      490                      495
Trp Val Pro Arg Val Pro Gly Ala Asp Lys Glu Glu Val Glu Ala Val
                  500                      505                      510
Thr Ala Leu Ala Ser Leu Ser Val Gly Ile Leu Ala Glu Asp Arg Pro
              515                      520                      525
Ser Glu Gln Leu Val Glu Glu Glu Pro Met Asn Leu
          530                      535                      540
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<210> 5219
<211> 1212
<212> DNA
<213> Homo sapiens

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120
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180
caaagagtga cgcccggagc tggagttatg gcggctacgg agccgatctt ggcggccact
240
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300
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720
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960
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1020
aacctaggtt atccctctac cacacatggg aagttttttca cctgggctcc caaggaccca
1080
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1200
cnagttactg gg
1212


<210> 5220
<211> 179
<212> PRT
<213> Homo sapiens
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<400> 5220
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Val Pro Pro Glu Lys Leu Glu Gly Ala Gly Ser Ser Ser Ala Pro Glu
            20   25   30
Arg Asn Cys Val Gly Ser Ser Leu Pro Glu Ala Ser Pro Pro Ala Pro
        35   40   45
Glu Pro Ser Ser Pro Asn Ala Ala Val Pro Glu Ala Ile Pro Thr Pro
    50   55   60
Arg Ala Ala Ala Ser Ala Ala Leu Glu Leu Pro Leu Gly Pro Ala Pro
65   70   75   80
Val Ser Val Ala Pro Gln Ala Glu Ala Glu Ala Arg Ser Thr Pro Gly
                85   90   95
Pro Ala Gly Ser Arg Leu Gly Pro Glu Thr Phe Arg Gln Arg Phe Arg
            100   105   110
Gln Phe Arg Tyr Gln Asp Ala Ala Gly Pro Arg Glu Ala Phe Arg Gln
        115   120   125
Leu Arg Glu Leu Ser Arg Gln Trp Leu Arg Pro Asp Ile Arg Thr Lys
    130   135   140
Glu Gln Ile Val Glu Met Leu Val·Gln Glu Gln Leu Leu Ala Ile Leu
145   150   155   160
Pro Glu Ala Ala Arg Ala Arg Arg Ile Arg Arg Arg Thr Asp Val Arg
                165   170   175
Ile Thr Gly

<210> 5221
<211> 497
<212> DNA
<213> Homo sapiens

<400> 5221
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gacacctccc tgaccagaga ccctctggtt atagaacttg gccaaaagca ggtgattcca
180
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<210> 5222·
<211> 112
<212> PRT

<213> Homo sapiens

<400> 5222
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            20   25   30
Ser Leu Val Asp Gly Arg Ile Ile Asp Thr Ser Leu Thr Arg Asp Pro
            35   40   45
Leu Val Ile Glu Leu Gly Gln Lys Gln Val Ile Pro Gly Leu Glu Gln
        50   55   60
Ser Leu Leu Asp Met Cys Val Gly Glu Lys Arg Arg Ala Ile Ile Pro
65   70   75   80
Ser His Leu Ala Tyr Gly Lys Arg Gly Phe Pro Pro Ser Val Pro Gly
                85   90   95
Thr Lys Asp Asn Leu Met Arg Pro Pro Gly Met Thr Ser Ser Ser Gln
            100   105   110

<210> 5223
<211> 637
<212> DNA
<213> Homo sapiens

<400> 5223
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420
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480
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540
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<210> 5224
<211> 148
<212> PRT
<213> Homo sapiens

<400> 5224
Xaa Thr Ile Phe Asp Asn Glu Ala Lys Asp Val Glu Arg Glu Val Cys

```
     1              5              10             15
Phe Ile Asp Ile Ala Cys Asp Glu Ile Pro Glu Arg Tyr Tyr Lys Glu
                20                       25             30
Ser Glu Asp Pro Lys His Phe Lys Ser Glu Lys Thr Gly Arg Gly Gln
             35                     40                    45
Leu Arg Glu Gly Trp Arg Asp Ser His Gln Pro Ile Met Cys Ser Tyr
          50                     55                    60
Lys Leu Val Thr Val Lys Phe Glu Val Trp Gly Leu Gln Thr Arg Val
65                       70                    75                    80
Glu Gln Phe Val His Lys Val Val Arg Asp Ile Leu Leu Ile Gly His
                85                       90                    95
Arg Gln Ala Phe Ala Trp Val Asp Glu Trp Tyr Asp Met Thr Met Asp
             100                    105                   110
Asp Val Arg Glu Tyr Glu Lys Asn Met His Glu Gln Thr Asn Ile Lys
          115                    120                   125
Val Cys Asn Gln His Ser Ser Pro Val Asp Asp Ile Glu Ser His Ala
       130                    135                   140
Gln Thr Ser Thr
145


<210> 5225
<211> 394
<212> DNA
<213> Homo sapiens

<400> 5225
acgcgtgaag gggctggggt gggcaatcag ggaggacttc ctggaggcgg cagctgaggc
60
tggggcagag aaggacccag ggcactggaa ggggaaggag aaacgtaagc agagtcttgg
120
caggcctggt cagacggaca tgcccaaggg aacagatagt accaggacag gggaccctgg
180
tctgaagggg cgatagcctg gcccccagtg gaaacagccc ctcccaaccc tggcggcaga
240
cagggagggt cggcaggtat gtgagatgca aacctggggg actgcccatc ccccagtgga
300
tgtgaggaca cggtgggttc aggaagtgga gtgacaaatg ggctgtgctg gacttgcttt
360
ccccacatga aggttaggaa ccaagagaac ggcc
394


<210> 5226
<211> 113
<212> PRT
<213> Homo sapiens

<400> 5226
Met Trp Gly Lys Gln Val Gln His Ser Pro Phe Val Thr Pro Leu Pro
1              5              10             15
Glu Pro Thr Val Ser Ser His Pro Leu Gly Asp Gly Gln Ser Pro Arg
             20                     25                    30
Phe Ala Ser His Ile Pro Ala Asp Pro Pro Cys Leu Pro Pro Gly Leu
          35                     40                    45
Gly Gly Ala Val Ser Thr Gly Gly Gln Ala Ile Ala Pro Ser Asp Gln
```

```
        50                    55                    60
Gly Pro Leu Ser Trp Tyr Tyr Leu Phe Pro Trp Ala Cys Pro Ser Asp
65                    70                    75                    80
Gln Ala Cys Gln Asp Ser Ala Tyr Val Ser Pro Ser Pro Ser Ser Ala
                85                    90                    95
Leu Gly Pro Ser Leu Pro Gln Pro Gln Leu Pro Pro Pro Gly Ser Pro
                100                   105                   110
Pro
```

```
<210> 5227
<211> 2366
<212> DNA
<213> Homo sapiens

<400> 5227
tcgcgaacag gccacccagg cacacgtgga tgttctttag ctccttggcg ccaccagatg
60
cagctgccag tgagatgttc tgcagctgtt tgatcctctc gctgaagtcg gacacccact
120
ggatgacggt catgccggca ggcaccgtgt agaaggccag tgtggtaacc ttacctgtct
180
acctgaactt cacccgtgca gacctcatct tcaccgtgga cttcgaaatt gctacaaagg
240
aggatcctcg cagcttctac gagcggggtg tcgcagtctt gtgcacagag taaacttttc
300
tagctgcccc tttctgtaat agtgaaagtt ggtatttaac atttattcat ttttaaaata
360
tttggaaggt ctgagcttgt gaaaagaaag tggttggtct gaggttggag gaagctgaat
420
ggaatctgac ggttgggagt ggtggaaatt ggaaggatac caggaggtat ttgggaaaac
480
cttacggagc tgccctcgtc tactggagca gaagaaatag acctaatttt cctcaaggga
540
attatggaga atcctattgt aaaatcactt gctaaggctc gtgagaggct agaagattcc
600
aaactagaag ctgtcagtga caataacttg gaattagtca atgaaattct tgaagacatc
660
actcctctaa taaatgtgga tgaaaatgtg gcagaattgg ttggtatact caaagaacct
720
cacttccagt cactgttgga ggcccatgat attgtggcat caaagtgtta tgattcacct
780
ccatcaagcc cagaaatgaa taattcttct atcaataatc agttattacc agtagatgcc
840
attcgtattc ttggtattca caaaagagct ggggaaccac tgggtgtgac atttagggtt
900
gaaaataatg atctggtaat tgcccgaatc ctccatgggg gaatgataga tcgacaaggt
960
ctacttcatg tgggagatat aattaaagaa gtcaatggcc atgaggttgg aaataatcca
1020
aaggaattac aagaattact gaaaaatatt agtggaagtg tcaccctaaa aatcttacca
1080
agttatagag ataccattac tcctcaacag gtatttgtga agtgtcattt tgattataat
1140
```

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ccatacaatg acaacctaat accttgcaaa gaagcaggat tgaagttttc caaaggagag
1200
attcttcaga ttgtaaatag agaagatcca aattggtggc aggctagcca tgtaaaagag
1260
ggaggaagcg ctggtctcat tccaagccag ttcctggaag agaagagaaa ggcatttgtt
1320
agaagagact gggacaattc aggacctttt tgtggaacta taagtagcaa aaaaaagaaa
1380
aagatgatgt atctcacaac cagaaatgca gaatttgatc gtcatgaaat ccagatatat
1440
gaggaggtag ccaaaatgcc tcccttccag agaaaaacat tagtattgat aggagctcaa
1500
ggtgtaggcc gaagaagctt gaaaaacagg ttcatagtat tgaatcccac tagatttgga
1560
actacggtgc catttacttc acggaaacca agggaagatg aaaaagatgg ccaggcatat
1620
aagtttgtgt cacgatctga gatggaagca gatattaaag ctggaaagta tttggaacat
1680
ggggaatatg aaggaaatct ctatggaacc aaaattgatt ctattcttga ggttgtccaa
1740
actggacgga cttgcattct ggatgtcaac ccacaagcac tgaaagtatt gaggacatca
1800
gagtttatgc cctatgtggt atttattgcg ctccggagc tagagacgtt acgtgccatg
1860
cacaaggctg tggtggatgc aggaatcact accaagcttc tgaccgactc tgacttgaag
1920
aaaacagtgg atgaaagtgc acggattcag agagcataca accactattt tgatttgatc
1980
atcataaatg ataatctaga caaagccttt gaaaaactgc aaactgccat agagaaactg
2040
agaatggaac cacagtgggt cccaatcagc tgggtttact gatgattcag taaggttaac
2100
aatgaaaatt aaactcttaa aaagtgactg caacaaataa accttctact gagaaaatac
2160
atcacagata gaagattatc tgctaagtcc aggcatttt atggtgtaga ttgaaataat
2220
agtacacttc tgaatttta tataaaatgt ggttggaagg tgtactaata tataatttat
2280
cttaattttt ctaactttgt atggataatc tttctattca tatcacataa agaaatgcgt
2340
tgaagcaaaa aaaaaaaaaa aaaaaa
2366


<210> 5228
<211> 550
<212> PRT
<213> Homo sapiens

<400> 5228
Arg Leu Gly Val Val Glu Ile Gly Arg Ile Pro Gly Gly Ile Trp Glu
1               5                   10                  15
Asn Leu Thr Glu Leu Pro Ser Ser Thr Gly Ala Glu Glu Ile Asp Leu
            20                  25                  30
Ile Phe Leu Lys Gly Ile Met Glu Asn Pro Ile Val Lys Ser Leu Ala
```

```
          35                      40                      45
Lys Ala Arg Glu Arg Leu Glu Asp Ser Lys Leu Glu Ala Val Ser Asp
      50                      55                      60
Asn Asn Leu Glu Leu Val Asn Glu Ile Leu Glu Asp Ile Thr Pro Leu
65                      70                      75                      80
Ile Asn Val Asp Glu Asn Val Ala Glu Leu Val Gly Ile Leu Lys Glu
                  85                      90                      95
Pro His Phe Gln Ser Leu Leu Glu Ala His Asp Ile Val Ala Ser Lys
                 100                     105                     110
Cys Tyr Asp Ser Pro Pro Ser Ser Pro Glu Met Asn Asn Ser Ser Ile
                 115                     120                     125
Asn Asn Gln Leu Leu Pro Val Asp Ala Ile Arg Ile Leu Gly Ile His
      130                     135                     140
Lys Arg Ala Gly Glu Pro Leu Gly Val Thr Phe Arg Val Glu Asn Asn
145                     150                     155                     160
Asp Leu Val Ile Ala Arg Ile Leu His Gly Gly Met Ile Asp Arg Gln
                 165                     170                     175
Gly Leu Leu His Val Gly Asp Ile Ile Lys Glu Val Asn Gly His Glu
                 180                     185                     190
Val Gly Asn Asn Pro Lys Glu Leu Gln Glu Leu Leu Lys Asn Ile Ser
      195                     200                     205
Gly Ser Val Thr Leu Lys Ile Leu Pro Ser Tyr Arg Asp Thr Ile Thr
      210                     215                     220
Pro Gln Gln Val Phe Val Lys Cys His Phe Asp Tyr Asn Pro Tyr Asn
225                     230                     235                     240
Asp Asn Leu Ile Pro Cys Lys Glu Ala Gly Leu Lys Phe Ser Lys Gly
                 245                     250                     255
Glu Ile Leu Gln Ile Val Asn Arg Glu Asp Pro Asn Trp Trp Gln Ala
                 260                     265                     270
Ser His Val Lys Glu Gly Gly Ser Ala Gly Leu Ile Pro Ser Gln Phe
                 275                     280                     285
Leu Glu Glu Lys Arg Lys Ala Phe Val Arg Arg Asp Trp Asp Asn Ser
      290                     295                     300
Gly Pro Phe Cys Gly Thr Ile Ser Ser Lys Lys Lys Lys Lys Met Met
305                     310                     315                     320
Tyr Leu Thr Thr Arg Asn Ala Glu Phe Asp Arg His Glu Ile Gln Ile
                 325                     330                     335
Tyr Glu Glu Val Ala Lys Met Pro Pro Phe Gln Arg Lys Thr Leu Val
                 340                     345                     350
Leu Ile Gly Ala Gln Gly Val Gly Arg Arg Ser Leu Lys Asn Arg Phe
      355                     360                     365
Ile Val Leu Asn Pro Thr Arg Phe Gly Thr Thr Val Pro Phe Thr Ser
      370                     375                     380
Arg Lys Pro Arg Glu Asp Glu Lys Asp Gly Gln Ala Tyr Lys Phe Val
385                     390                     395                     400
Ser Arg Ser Glu Met Glu Ala Asp Ile Lys Ala Gly Lys Tyr Leu Glu
                 405                     410                     415
His Gly Glu Tyr Glu Gly Asn Leu Tyr Gly Thr Lys Ile Asp Ser Ile
                 420                     425                     430
Leu Glu Val Val Gln Thr Gly Arg Thr Cys Ile Leu Asp Val Asn Pro
      435                     440                     445
Gln Ala Leu Lys Val Leu Arg Thr Ser Glu Phe Met Pro Tyr Val Val
      450                     455                     460
Phe Ile Ala Ala Pro Glu Leu Glu Thr Leu Arg Ala Met His Lys Ala
```

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465                    470                    475                    480
Val Val Asp Ala Gly Ile Thr Thr Lys Leu Leu Thr Asp Ser Asp Leu
                485                    490                    495
Lys Lys Thr Val Asp Glu Ser Ala Arg Ile Gln Arg Ala Tyr Asn His
            500                    505                    510
Tyr Phe Asp Leu Ile Ile Ile Asn Asp Asn Leu Asp Lys Ala Phe Glu
        515                    520                    525
Lys Leu Gln Thr Ala Ile Glu Lys Leu Arg Met Glu Pro Gln Trp Val
    530                    535                    540
Pro Ile Ser Trp Val Tyr
545                    550
```

<210> 5229
<211> 1031
<212> DNA
<213> Homo sapiens

<400> 5229

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acgcgtgtgc tgtggttaca tccgtggaac agacagacag cagctgcccc tgcaaatgtc
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agcgccagcc cagtcaaaag agcttgaaac ctaccaagcc ggaggactgt gctgtgcctc
120
tctcgcccac attttcccca agcactctca ggaacctggc aacagtgtcc ccttgtggcc
180
aagcctggaa catcacatct gtacgttgca atctgtggat cagctacgag actgagagaa
240
aggaatgaaa ggatggaaga attacaagat caggcactgc tgtctgtctg ttccacggat
300
gtaaccacag cacacgcgtg gctcacggta ctagtgtgat aaatgcttgt tacatgaagg
360
cgtgaacagg gatgagaaga gacttcctgg agaaacaaaa ggactaacaa tcaggaaggg
420
gaggtgatcg gggcaggagt aaagtggaca cctcagcaaa gccattcgct gtgatctctg
480
attgtgcagt gtcatgtcct gtcaccagag ccccctcgtg tttgatgttg gccaatgccg
540
ccagcatgat ctagcaggcc aaatcctaat ctaccattct ctgacaccag ctggtcccct
600
ggggtcgtcc acccgatgtc ccccattctc cccacttggc ctcccccaca ggctctcggc
660
aaaggaccgt gggaggcacc tgtgacactg ccctttttcct gtgcagctgt ttttcttctt
720
cattcttttc actcctcgtt actcttttttt ttttcactct cagcccacac aaaactagga
780
actttgttat tctacttatt tttctgtact ctgtctgttt gcacacagat ggatatctga
840
gagccagcga acttttctttta cctcctagta tcatttcatg aaaattagta gcacctgcac
900
aatggggcct tggagacagg aataaaagga aaaatctgga atggaatcac atgacgcaac
960
aggctatgaa gactccctgc ccggctgcta tatgtctggt aaacagaata aatagtactt
1020
gagcatccct g
1031
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<210> 5230
<211> 102
<212> PRT
<213> Homo sapiens

<400> 5230
Met Ile Leu Gly Gly Lys Glu Ser Ser Leu Ala Leu Arg Tyr Pro Ser
 1   5   10   15
Val Cys Lys Gln Thr Glu Tyr Arg Lys Ile Ser Arg Ile Thr Lys Phe
            20   25   30
Leu Val Leu Cys Gly Leu Arg Val Lys Lys Lys Arg Val Thr Arg Ser
        35   40   45
Glu Lys Asn Glu Glu Glu Lys Gln Leu His Arg Lys Arg Ala Val Ser
    50   55   60
Gln Val Pro Pro Thr Val Leu Cys Arg Glu Pro Val Gly Glu Ala Lys
65   70   75   80
Trp Gly Glu Trp Gly Thr Ser Gly Gly Arg Pro Gln Gly Thr Ser Trp
                85   90   95
Cys Gln Arg Met Val Asp
                100

<210> 5231
<211> 845
<212> DNA
<213> Homo sapiens

<400> 5231
tccggatctt ggagggtaca gagggcgccc ctcggcctcc tccctttcgg aggtggggac
60
aaggtggagg aaggctgca ggaggaggag ctctagcatc gcgacccgcc ccgtcccgtc
120
cagtctggcc tgggcgccgc gggaacgctg tcctggctgc cgccacccga acagcctgtc
180
ctggtgcccc ggctccctgc cccgcgccca gtcatgaccc tgcgcccctc actcctcccg
240
ctccatctgc tgctgctgct gctgctcagt gcggcggtgt gccgggctga ggctgggctc
300
gaaaccgaaa gtcccgtccg gaccctccaa gtggagaccc tggtggagcc cccagaacca
360
tgtgccgagc ccgctgcttt tggagacacg cttcacatac actacacggg aagcttggta
420
gatggacgta ttattgacac ctccctgacc agagaccctc tggttataga acttggccaa
480
aagcaggtga ttccaggtct ggagcagagt cttctcgaca tgtgtgtggg agagaagcga
540
agggcaatca ttccttctca cttggcctat ggaaacggg gatttccacc atctgtccca
600
gcggatgcag tggtgcagta tgacgtggag ctgattgcac taatccgagc caactactgg
660
ctaaagctgg tgaagggcat tttgcctctg gtagggatgg ccatggtgcc agccctcctg
720
ggcctcattg ggtatcacct atacagaaag gccaatagac ccaaagtctc caaaaagaag
780

ctcaaggaag agaaacgaaa caagagcaaa aagaaataat aaataataaa ttttaaaaaa
840
cttaa
845

<210> 5232
<211> 201
<212> PRT
<213> Homo sapiens

<400> 5232
Met Thr Leu Arg Pro Ser Leu Leu Pro Leu His Leu Leu Leu Leu Leu
 1   5   10   15
Leu Leu Ser Ala Ala Val Cys Arg Ala Glu Ala Gly Leu Glu Thr Glu
            20   25   30
Ser Pro Val Arg Thr Leu Gln Val Glu Thr Leu Val Glu Pro Pro Glu
        35   40   45
Pro Cys Ala Glu Pro Ala Ala Phe Gly Asp Thr Leu His Ile His Tyr
    50   55   60
Thr Gly Ser Leu Val Asp Gly Arg Ile Ile Asp Thr Ser Leu Thr Arg
65   70   75   80
Asp Pro Leu Val Ile Glu Leu Gly Gln Lys Gln Val Ile Pro Gly Leu
                85   90   95
Glu Gln Ser Leu Leu Asp Met Cys Val Gly Glu Lys Arg Arg Ala Ile
            100   105   110
Ile Pro Ser His Leu Ala Tyr Gly Lys Arg Gly Phe Pro Pro Ser Val
            115   120   125
Pro Ala Asp Ala Val Val Gln Tyr Asp Val Glu Leu Ile Ala Leu Ile
        130   135   140
Arg Ala Asn Tyr Trp Leu Lys Leu Val Lys Gly Ile Leu Pro Leu Val
145   150   155   160
Gly Met Ala Met Val Pro Ala Leu Leu Gly Leu Ile Gly Tyr His Leu
                165   170   175
Tyr Arg Lys Ala Asn Arg Pro Lys Val Ser Lys Lys Lys Leu Lys Glu
            180   185   190
Glu Lys Arg Asn Lys Ser Lys Lys Lys
        195   200

<210> 5233
<211> 2801
<212> DNA
<213> Homo sapiens

<400> 5233
agatctcaat tcacacatga ctacctttga gctaatgact gtctccagaa ataactgtg
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ccccaagaag tgctccagat ttgcaaggaa tagccccaag agaataccaa gacaagcagg
120
ctgttccctg gaaaaaatct aatgcaagga gggctagttc acagcaaatt cactgcctcc
180
tcccatgcac gtggtagaga gtaccagtat caacatggcc ctgttttctg ctaaaaccag
240
attttgagga atcagagacc cccaacacta ctcactcagt agctagcagc cccttccttt
300

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caactgggag tgttattaga atgaaaagta attagttaga agggcataca tctcagtggc
360
atgagcattg tggaatatcc tttcctaggc acatttgtcc actaagggaa cagcctcaga
420
aactggtaca gcaatgggtg agatgagatc ctggagagag aacacagcca tccctatag
480
aaaggcacag ctttgggct tctctggcct gaatgccttc tggggtattt ccatatgcaa
540
cagcccagag tcatagcctt gggcaaccac acatagaggt ttccttctca cttcagacac
600
atacatcact ttcacaccac ttggggatgg aaatacctac aagagtgaag gtcaagggcc
660
ctccccaggc atctcattca ttactcagct tccttcctga ccaagtctgc caaccaatgg
720
ccagctatgc gcctcatcct cattgcttct gcctccacgt aaatgaaacc aaaggcctca
780
gcatatcctg ggaggactgg gggctgttac ctaatggtcc tctctgtccc attataggtg
840
caaggcaccc catccacaca tttgcaccac tactccaaga tagtattttt cttttcacac
900
aatctcttta cagcagaatc cagagttggg ttgtagttta ccttcctgga aagctcatta
960
tctttgtttg aattaacatt tcagcatgga actaactggg cggaggaagg atcgttatac
1020
gtcttcagaa agttctcatt gccccagctg cctagtacta tacaagaagc tctactttga
1080
tggcagatct aagaaggcta taggcctttg tttgtaggaa gcagtgtcat tacattcaag
1140
cttcacttct ctgattggct tccaaccact gggattcaaa gagaatccaa ggttctgcct
1200
atgtctgatg acataaggaa aacttggctt cctctgctca aggttcccct ctgctcatcc
1260
ctcctcattc agacatcctc caccatacca gtgtttagaa gcaaaacatg aagggctagc
1320
gccaccagga tagttagcag aaatattgtc tgtaaagcta ggcagatgag cccagaagaa
1380
tggtcccaga gaaagcagac tggctccaat agatatcagg cagcaatccc aataaattct
1440
gacatgtcct tggcaatgga agcctgggtt ggagatcctg aggcagctgt gcctactgtt
1500
ccccacctca gaagcttcct gcccagagag ccagcagcct tgggatacta atgaggatgc
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1620
tatccacatg gcaggcaggt ggctttgtgt ctggaaagct ttgcctagcc agtacagctg
1680
tgagcagagg ctggttataa atttgaactc cctcagccca tttgcaactc tgcctctgtt
1740
cccttgcatt ctgtttggtt gccctttagt ttcctagtaa atgctccttt tgaaaaactc
1800
caaccttgtc ttatttaact tggggaagg ggattctcca atgtctttc caggataaag
1860
aaggaaatta aaataccatg aaaaaatgga catggcagta gaaaggaaac attctgatca
1920
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gaccttggga aaagctggtg ccgagagagg gagaggccag gtgtcccccc acccaactgg
1980
cactgattct cagccccttc ctcttacttc tgttggcttc aaggagacct gcccttgatg
2040
tgtgttgctg ctgaagcacc ctcccagcca gtgagttgga catatgcagc aggcactttg
2100
atgtccagga agtacactgg tacatgacag gagcaagggt cagggagggg aggggaaagg
2160
tttctacaat gcagatgttt tcaaaattct ccaacaatca tgactctaaa tggtatgatt
2220
tagggctggg tgcagtgact cacacctgta atctcagcac tttgggaggc caaggcggga
2280
ggatcacttg ataccagaag ttcaagacca gtctggcaac gtggagagac caccatcatt
2340
tcaaaagaga cccccccgcc ccccggcta atttttaaaa aattagcagt acctgtagtc
2400
ccagctactt aggaagctga dataggagaa tcgcctgagt ccaagagctt gaggctacag
2460
cgagccaaga ttgcaacact gcatttcagc ctgggtgaca gagcaaggcc ctgtctctct
2520
aaaaaagaaa aaaaaggtat tgtttagttc acatggccat cagtagaact acatttcata
2580
tgatgagaag aaaataatta tttattttac acttgagtca gggagactga caaaggatag
2640
gtatggaaaa tggcttgcta ttttcatggc caccctgtcc tgcaatgcgg ggggtgggag
2700
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2760
agaaatatat tgtctctcat gaaaaaaaaa aaaaaaaaa a
2801

<210> 5234
<211> 57
<212> PRT
<213> Homo sapiens

<400> 5234
Leu Thr Pro Val Ile Ser Ala Leu Trp Glu Ala Lys Ala Gly Gly Ser
1   5   10   15
Leu Asp Thr Arg Ser Ser Arg Pro Val Trp Gln Arg Gly Glu Thr Thr
            20   25   30
Ile Ile Ser Lys Glu Thr Pro Pro Pro Arg Leu Ile Phe Lys Lys
        35   40   45
Leu Ala Val Pro Val Val Pro Ala Thr
    50   55

<210> 5235
<211> 3017
<212> DNA
<213> Homo sapiens

<400> 5235
nncggccggg aaagtaacca gaagcttcag gaagagatta taaagacttt ggaacacttg
60

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cccattccta ctaaaaatat gttggaggaa agcaaagtac ttccaattat tcaacgctgg
120
tctcagacta agactgctgt ccctccgttg agtgaaggag atgggtattc tagtgagaat
180
acatcgcgtg ctcatacacc actcaacaca cctgatcctt ccaccaagct gagcacagaa
240
gctgacacag acactcccaa gaaactaatg tttcgcagac tgaaaattat aagtgaaaat
300
agcatggaca gtgcaatctc tgatgcaacc agtgagctag aaggcaagga tggcaaagag
360
gatcttgatc aattagaaaa tgtccctgta gaggaagagg aagaattgca gtcacaacag
420
ctactcccac aacagctgcc tgaatgcaaa gttgatagtg aaaccaacat agaagctagt
480
aagctaccta catctgaacc agaagctgac gctgaaatag agcccaaaga gagcaacggc
540
acaaaactag aagaacctat taatgaagaa acaccatccc aagatgaaga ggagggtgtg
600
tctgatgtgg agagtgaaag gagccaagaa cagccagata aaacagtgga tataagtgat
660
ttggccacca aactcctgga cagttggaaa gacctaaagg aggtatatcg aattccaaag
720
aaaagtcaaa ctgaaaagga aaacacaaca actgaacgag aagggatgc tgttggcttc
780
agagatcaaa cacctgcccc gaagactcct aataggtcaa gagagagaga cccagacaag
840
caaactcaaa ataaagagaa aaggaaacga agaagctccc tctcaccacc ctcttctgcc
900
tatgagcggg gaacaaaaag gccagatgac agatatgata caccaacttc taaaaagaaa
960
gtacgaatta aagaccgcaa taaactttct acagaggaac gccggaagtt gtttgagcaa
1020
gaggtggctc aacgggaggc tcagaaacaa cagcaacaga tgcagaacct gggaatgaca
1080
tcaccactgc cctatgactc tcttggttat aatgccccgc atcatccctt tgctggttac
1140
ccaccaggtt atcccatgca ggcctatgtg atcccagca accctaatgc tggaaaggtg
1200
ctcctgccca cacccagcat ggacccagtg tgttctcctg ctccttatga tcatgctcag
1260
cccttggtgg acattctac agaacccctt tctgcccctc caccagtacc agtggtgcca
1320
catgtggcag ctcctgtgga agtttccagt tcccagtatg tggcccagag tgatggtgta
1380
gtacaccaag actccagcgt tgctgtcttg ccagtgccgg ccccggccc agttcaggga
1440
cagaattata gtgtttggga ttcaaaccaa cagtctgtca gtgtacagca gcagtactct
1500
cctgcacagt ctcaagcaac catatattat caaggacaga catgtccaac agtctatggt
1560
gtgacatcac cttattcaca gacaactcca ccaattgtac agagttatgc ccagccaagt
1620
cttcagtata tccaggggca acagattttc acagctcatc cacaaggagt ggtggtacag
1680
```

```
ccagccgcag cagtgactac aatagttgca ccagggcagc ctcagccctt gcagccatct
1740
gaaatggttg tgacaaataa tctcttggat ctgccgcccc cctctcctcc caaaccaaaa
1800
accattgtct tacctcccaa ctggaagaca gctcgagatc cagaagggaa gatttattac
1860
taccatgtga tcacaaggca gactcagtgg gatcctccta cttgggaaag cccaggagat
1920
gatgccagcc ttgagcatga agctgagatg gacctgggaa ctccaacata tgatgaaaac
1980
cccatgaagg cctcgaaaaa gcccaagaca gcagaagcag acacctccag tgaactagca
2040
aagaaaagca aagaagtatt cagaaaagag atgtcccagt tcatcgtcca gtgcctgaac
2100
ccttaccgga aacctgactg caaagtggga agaattacca caactgaaga ctttaaacat
2160
ctggctcgca agctgactca cggtgttatg aataaggagc tgaagtactg taagaatcct
2220
gaggacctgg agtgcaatga gaatgtgaaa cacaaaacca aggagtacat taagaagtac
2280
atgcagaagt ttgggggctgt ttacaaaccc aaagaggaca ctgaattaga atgactgttg
2340
ggccagggtg ggaggatggg tggtcaggta ggacagactc tagggagagg aaatcctgtg
2400
ggcctttctg tcccacccct gtcagcactg tgctactgat gatacatcac cctggggaat
2460
tcaaccctgc agatgtcaac tgaaggccac aaaaatgaac tccatctaca agtgattacc
2520
tagttgtgag ctgttggcat gtggttagaa gccatcagag gtgcaagggc ttagaaaaga
2580
acctggccag acctgactcc actcttaaac ctgggtcttc tccttggcgg tgctgtcagc
2640
gcacagaccc atgcgcatcc ccacccacaa ccctttaccc tgatgatctg tattatattt
2700
taatgtatat gtgaatatat tgaaaataat ttgttttttc ctggtttttg tttggttttc
2760
gttttgcttt tagcctctac atgctaggat cacaggaaga ctttgtaagg acagtttaag
2820
ttctcctgca aggtttaatt tgttatcatg taaatattcc aaagcaggct gccttgtggt
2880
tttggccagc cttgtgctat gttgataaga ttgatttact gcttaaaatc actttacttt
2940
atccaatttt tactgaactt tttatgtaaa aaaataaaat caattaaaga aaaaaaaaac
3000
aaaaaaaaaa aaaaaaa
3017


<210> 5236
<211> 178
<212> PRT
<213> Homo sapiens

<400> 5236
Lys Thr Ile Val Leu Pro Pro Asn Trp Lys Thr Ala Arg Asp Pro Glu
```

```
         1                      5                     10                    15
        Gly Lys Ile Tyr Tyr Tyr His Val Ile Thr Arg Gln Thr Gln Trp Asp
                     20                    25                    30
        Pro Pro Thr Trp Glu Ser Pro Gly Asp Asp Ala Ser Leu Glu His Glu
                     35                    40                    45
        Ala Glu Met Asp Leu Gly Thr Pro Thr Tyr Asp Glu Asn Pro Met Lys
                 50                    55                    60
        Ala Ser Lys Lys Pro Lys Thr Ala Glu Ala Asp Thr Ser Ser Glu Leu
        65                    70                    75                    80
        Ala Lys Lys Ser Lys Glu Val Phe Arg Lys Glu Met Ser Gln Phe Ile
                         85                    90                    95
        Val Gln Cys Leu Asn Pro Tyr Arg Lys Pro Asp Cys Lys Val Gly Arg
                     100                   105                   110
        Ile Thr Thr Thr Glu Asp Phe Lys His Leu Ala Arg Lys Leu Thr His
                 115                   120                   125
        Gly Val Met Asn Lys Glu Leu Lys Tyr Cys Lys Asn Pro Glu Asp Leu
                 130                   135                   140
        Glu Cys Asn Glu Asn Val Lys His Lys Thr Lys Glu Tyr Ile Lys Lys
        145                   150                   155                   160
        Tyr Met Gln Lys Phe Gly Ala Val Tyr Lys Pro Lys Glu Asp Thr Glu
                     165                   170                   175
        Leu Glu
```

```
<210> 5237
<211> 1238
<212> DNA
<213> Homo sapiens

<400> 5237
ntagaagaca aggcgtcgtt tgaataactt gcctgatttt tcttcctacc gagtagcatt
60
tctttttttt tcaccatatc tttccctaag gcagctcctt attctgtagg aattgccaat
120
gttgatgtgt tattgttagg tatttatatc attcacaggg ctgtcagaaa tcccgatgat
180
cttgaagcaa ggtctcatat gcacttggca agtgcttttg ctggcatcgg ctttggaaat
240
gctggtgttc atctgtgcca tggaatgtct tacccaattt caggtttagt gaagatgtat
300
aaagcaaagg attacaatgt ggatcaccca ctggtgcccc atggcctttc tgtggtgctc
360
acgtccccag cggtgttcac tttcacggcc cagatgtttc cagagcgaca cctggagatg
420
gcagaaatac tgggagccga cacccgcact gccaggatcc aagatgcagg gctggtgttg
480
gcagacacgc tccggaaatt cttattcgat ctggatgttg atgatggcct agcagctgtt
540
ggttactcca aagctgatat ccccgcacta gtgaaaggaa cgctgcccca ggaaagggtc
600
accaagcttg caccccgtcc ccagtcagaa gaggatctgg ctgctctgtt tgaagcttca
660
atgaaactgt attaattgtc attttaactg aaagaattac cgctggccat tgtagtgctg
720
```

```
agagcaagag ctgatctagc tagggctttg tcttttcatc tttgtgcata acttacctgt
780
taccagtata ggtgggatat acatttatct tgcaggaaat tccccaaagc tcagagtcca
840
gttccttcca taaaacaggc tggacaaatg accactatgt tagacccca ggctcgactt
900
caggggtcag tgttcctgtc ccaaacccca cacagaatac tctgcctctg cttcatgtag
960
caaatgagca aaaactcagt atctatcaaa agtgtaaatt atatttccta tgcctagtaa
1020
ttcacttcat gtctaaaaat ttatctgata gaaacactag caccagtaca tacagaagca
1080
tggcaaggat gtttctggca gcacttttct aataataaaa gatttgaaac aaccttaagt
1140
attcattatt ggtatataga tcacttatag tatactagac agtggaatac tatggtactg
1200
ttaataaaga tgaagtaaat ctcttggaaa aaaaaaaa
1238


<210> 5238
<211> 212
<212> PRT
<213> Homo sapiens

<400> 5238
Phe Phe Phe Leu Pro Ser Ser Ile Ser Phe Phe Phe Thr Ile Ser Phe
 1               5                  10                  15
Pro Lys Ala Ala Pro Tyr Ser Val Gly Ile Ala Asn Val Asp Val Leu
            20                  25                  30
Leu Leu Gly Ile Tyr Ile Ile His Arg Ala Val Arg Asn Pro Asp Asp
            35                  40                  45
Leu Glu Ala Arg Ser His Met His Leu Ala Ser Ala Phe Ala Gly Ile
    50                  55                  60
Gly Phe Gly Asn Ala Gly Val His Leu Cys His Gly Met Ser Tyr Pro
65                  70                  75                  80
Ile Ser Gly Leu Val Lys Met Tyr Lys Ala Lys Asp Tyr Asn Val Asp
                85                  90                  95
His Pro Leu Val Pro His Gly Leu Ser Val Val Leu Thr Ser Pro Ala
            100                 105                 110
Val Phe Thr Phe Thr Ala Gln Met Phe Pro Glu Arg His Leu Glu Met
        115                 120                 125
Ala Glu Ile Leu Gly Ala Asp Thr Arg Thr Ala Arg Ile Gln Asp Ala
    130                 135                 140
Gly Leu Val Leu Ala Asp Thr Leu Arg Lys Phe Leu Phe Asp Leu Asp
145                 150                 155                 160
Val Asp Asp Gly Leu Ala Ala Val Gly Tyr Ser Lys Ala Asp Ile Pro
                165                 170                 175
Ala Leu Val Lys Gly Thr Leu Pro Gln Glu Arg Val Thr Lys Leu Ala
            180                 185                 190
Pro Arg Pro Gln Ser Glu Glu Asp Leu Ala Ala Leu Phe Glu Ala Ser
        195                 200                 205
Met Lys Leu Tyr
        210
```

```
<210> 5239
<211> 2061
<212> DNA
<213> Homo sapiens

<400> 5239
nttttttttt tttttttttt tttttttttt tttttttttt tttttttttt tttttttttg
60
agcccactct gctttattta caacacgcag gctgtctgta caaacagcgg ccgatattat
120
taaaaacaaa agaggtgagt gagaatcgtc acctttctgc tttccttcct cacttggcca
180
ggctctagta ctccaccttt gagctgccat gcccaatagg ggaagtccaa aattaaaaat
240
acaaccggtg tagaagaaaa taaatgggga gtgaaataga agaaagatg agggaggggga
300
gtgctaatat ttacactaga gttttataga caactgtccc attccatccc aattccaatc
360
ctgacccaga aagtgatggt ggcaggtcca agagacagag attatgtgtc gggacacaga
420
cagcctccca tccccaaccg taatggattc aatttcaagt ccacagagtg gggaggaagg
480
atagggtggg aaagtgagac actcattttc aaacaagtct cccttgagaa ttcctgcctt
540
gaagtgcaga cagtatccaa gctccagggg ataggctgag gaccctgagg ctcagttccc
600
aaatcatgtt gtcatttgga agttccaggc taaagttggt gccatcaggg ctctccagat
660
ttgggaggcc cccctaaccg ccgggcctct ggcctcagtt ccttgcattt ctggcaataa
720
aagaagtcgg ggacgttggt cttcttaatc ttagcacagg agaggtggat ccacgtccca
780
cacaggctgc actcaatcat gggccgccct gcaaagggct ttcgacagta acatgtgatc
840
agatcccatg agtcatcacc tgattctacc atgatgtcct cgtccatgac ccgcatctcg
900
ccttcactgg agctggcatc tccatcttgg cttgtttcag tgctgcccac ctccttgctt
960
tcactgtcag caggagggac tccttcaggg tgcactgtgg caggggcct aggagcctca
1020
gggggtgttg gcagcacagg gactggggct tcaccccta ccactgttgc catctcttct
1080
tcttcttcct cttcctcctc ttcctcctcc tcttcagagt ctgtatcact gggggggtgcc
1140
tggggaggcc caggaggtgg gagtctatcc ccccgttctg ccttttttaa cttccgcttc
1200
ttgctcttct tgattcgaga tctcttttcc ccatccccag gagttggccg aggcctccga
1260
agcaccccaa agccagcccc agctcctggc cccaactttc ggttctttcg gtccttcttt
1320
cgaggaggat gggagaggtc cccctgggaa aggggcacgg gggtaagagc agcagggggc
1380
cgggaggtat gtgtcaggga tgtgggggac aaaggagatg ccactttggg cccatccaga
1440
```

tcaaagagag agtccttgag cttcatcttc tcaagcaagg tagcactgtc gggggcctgc
1500
agacgagaga aagtggacct tgggggtcct ggctgggtgg gacctgcttg agctgccctt
1560
ctcttggatg actttgcttt cttaacaaaa gtctggatgg ttcgaagatc tgaggggggcc
1620
gagtcccagc catcactgtc ggccgcactc tctcctcgca atggagagct ggagccagag
1680
gctggccagt cactttcctc tttgctaggg ggaatgtaac cagcatatgc caaaacaaaa
1740
ctgcagaatt tgttgaaatc ctcaattgtt ctccgccgtt tctctggtgg ctgagtctct
1800
ggcttaaggg tcggaggtgg atcttcggga ctgggctccg ccatggcttc cagcatcgcc
1860
ccctcccctc ctcccggtcc ggcgcccccc tccccggagc cggggatccc ggtgccgcct
1920
ctagtgctcg atgctcccac tgcttcgctc cacagaagtg tccgcctcag cccggttgag
1980
actcgagtcc gctagccgct gccgccacct ccctctacca ctgcctcccg cactcccgga
2040
ccgggccccc tccccccgcg g
2061

<210> 5240
<211> 226
<212> PRT
<213> Homo sapiens

<400> 5240
Met Met Ser Ser Ser Met Thr Arg Ile Ser Pro Ser Leu Glu Leu Ala
1   5   10   15
Ser Pro Ser Trp Leu Val Ser Val Leu Pro Thr Ser Leu Leu Ser Leu
            20   25   30
Ser Ala Gly Gly Thr Pro Ser Gly Cys Thr Val Ala Gly Gly Leu Gly
        35   40   45
Ala Ser Gly Gly Val Gly Ser Thr Gly Thr Gly Ala Ser Pro Pro Thr
    50   55   60
Thr Val Ala Ile Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser
65   70   75   80
Ser Ser Glu Ser Val Ser Leu Gly Gly Ala Trp Gly Gly Pro Gly Gly
            85   90   95
Gly Ser Leu Ser Pro Arg Ser Ala Phe Phe Asn Phe Arg Phe Leu Leu
            100   105   110
Phe Leu Ile Arg Asp Leu Phe Ser Pro Ser Pro Gly Val Gly Arg Gly
        115   120   125
Leu Arg Ser Thr Pro Lys Pro Ala Pro Ala Pro Gly Pro Asn Phe Arg
    130   135   140
Phe Phe Arg Ser Phe Phe Arg Gly Gly Trp Glu Arg Ser Pro Trp Glu
145   150   155   160
Arg Gly Thr Gly Val Arg Ala Ala Gly Gly Arg Glu Val Cys Val Arg
            165   170   175
Asp Val Gly Asp Lys Gly Asp Ala Thr Leu Gly Pro Ser Arg Ser Lys
            180   185   190
Arg Glu Ser Leu Ser Phe Ile Phe Ser Ser Lys Val Ala Leu Ser Gly

```
              195                200                 205
Ala Cys Arg Arg Glu Lys Val Asp Leu Gly Gly Pro Gly Trp Val Gly
    210                215                220
Pro Ala
225
```

`<210> 5241`
`<211> 461`
`<212> DNA`
`<213> Homo sapiens`

`<400> 5241`

```
gcggcccccg atttgcagcc catggatgca tttatcacgt ttgttcctct gcgtgcctcc
60
ccctcaatat gccggggggtg tacccatttc caagggatga cagcagggcc ccacagcgag
120
ccccaggctg atccggagcc ctcttcatcc ccgtccaggg ccgtttgcac tgctcccggc
180
atcggcacac cttgttctgg ttgtgctggg acggcagcgc cccgtgaggt cagagggttg
240
ctgtcacatc tgccacccag tgtggtctcc tggagatttc agtggttcgg tgcttcgctt
300
ctcacctggc cagctctgag ttcagcctct cgcctgtggg gaccccctgca tcctggcggc
360
agaaggagga ggaagaagcc accagaggtt gccaggaacc cagtggcagg ggaggtgggg
420
ctgagccagg cccgcccgct gtgccgggag ttcccacgcg g
461
```

`<210> 5242`
`<211> 146`
`<212> PRT`
`<213> Homo sapiens`

`<400> 5242`

```
Met Asp Ala Phe Ile Thr Phe Val Pro Leu Arg Ala Ser Pro Ser Ile
1               5                10                  15
Cys Arg Gly Cys Thr His Phe Gln Gly Met Thr Ala Gly Pro His Ser
            20                25                  30
Glu Pro Gln Ala Asp Pro Glu Pro Ser Ser Ser Pro Ser Arg Ala Val
        35                40                  45
Cys Thr Ala Pro Gly Ile Gly Thr Pro Cys Ser Gly Cys Ala Gly Thr
    50                55                  60
Ala Ala Pro Arg Glu Val Arg Gly Leu Leu Ser His Leu Pro Pro Ser
65                70                75                  80
Val Val Ser Trp Arg Phe Gln Trp Phe Gly Ala Ser Leu Leu Thr Trp
                85                90                  95
Pro Ala Leu Ser Ser Ala Ser Arg Leu Trp Gly Pro Leu His Pro Gly
            100                105                 110
Gly Arg Arg Arg Arg Lys Lys Pro Pro Glu Val Ala Arg Asn Pro Val
        115                120                 125
Ala Gly Glu Val Gly Leu Ser Gln Ala Arg Pro Leu Cys Arg Glu Phe
    130                135                 140
Pro Arg
```

145

<210> 5243
<211> 344
<212> DNA
<213> Homo sapiens

<400> 5243
ngaattcctt gcattctctt ctgggccaaa agaataatga ttaaatttaa gaatcaaacc
60
tggctggacc ttacagacga gccatttggt cagaaggtaa ctgtggaccc tgacaactca
120
aattgcagtg aagaaagtgc taggttgtct ttgaagcttg gtgatgctgg aaacccaga
180
agtcttgcta taagattcat ccttaccaat tacaacaagt tgtccatcca gagttggttt
240
agtttgcgcc gagtcgagat catttccaac aattcaatcc aagcagtctt taacccaact
300
ggcgtatatg ctccctctgg ttactcctac cgctgccaac gcgt
344

<210> 5244
<211> 114
<212> PRT
<213> Homo sapiens

<400> 5244
Xaa Ile Pro Cys Ile Leu Phe Trp Ala Lys Arg Ile Met Ile Lys Phe
1   5   10   15
Lys Asn Gln Thr Trp Leu Asp Leu Thr Asp Glu Pro Phe Gly Gln Lys
            20   25   30
Val Thr Val Asp Pro Asp Asn Ser Asn Cys Ser Glu Glu Ser Ala Arg
        35   40   45
Leu Ser Leu Lys Leu Gly Asp Ala Gly Asn Pro Arg Ser Leu Ala Ile
    50   55   60
Arg Phe Ile Leu Thr Asn Tyr Asn Lys Leu Ser Ile Gln Ser Trp Phe
65   70   75   80
Ser Leu Arg Arg Val Glu Ile Ile Ser Asn Asn Ser Ile Gln Ala Val
                85   90   95
Phe Asn Pro Thr Gly Val Tyr Ala Pro Ser Gly Tyr Ser Tyr Arg Cys
            100   105   110
Gln Arg

<210> 5245
<211> 483
<212> DNA
<213> Homo sapiens

<400> 5245
nngccatgga aacgaaagcg gccaagtaga gctccgtcct gacgcgccgc ctcccgtggg
60
ctccggccgg ctaagccgcg gcggacaact atgctgaaag ccaagatcct cttcgtgggg
120

ccttgcgaga gtggaaaaac tgttttggcc aactttctga cagaatcttc tgacatcact
180
gaatacagcc caacccaagg agtgaggttt gagtcctgct ggccggccct gatgaaggat
240
gctcatggag tggtgatcgt cttcaatgct gacatcccaa gccaccggaa ggaaatggag
300
atgtggtatt cctgctttgt ccaacagccg tccttacagg acacacagtg tatgctaatt
360
gcacaccaca aaccaggctc tggagatgat aaaggaagcc tgtctttgtc gccacccttg
420
aacaagctga agctggtgca ctcaaacctg gaagatgacc ctgaggagat ccggatggaa
480
ttc
483

<210> 5246
<211> 131
<212> PRT
<213> Homo sapiens

<400> 5246
Met Leu Lys Ala Lys Ile Leu Phe Val Gly Pro Cys Glu Ser Gly Lys
  1   5   10   15
Thr Val Leu Ala Asn Phe Leu Thr Glu Ser Ser Asp Ile Thr Glu Tyr
             20   25   30
Ser Pro Thr Gln Gly Val Arg Phe Glu Ser Cys Trp Pro Ala Leu Met
             35   40   45
Lys Asp Ala His Gly Val Val Ile Val Phe Asn Ala Asp Ile Pro Ser
        50   55   60
His Arg Lys Glu Met Glu Met Trp Tyr Ser Cys Phe Val Gln Gln Pro
65   70   75   80
Ser Leu Gln Asp Thr Gln Cys Met Leu Ile Ala His His Lys Pro Gly
                 85   90   95
Ser Gly Asp Asp Lys Gly Ser Leu Ser Leu Ser Pro Pro Leu Asn Lys
                100   105   110
Leu Lys Leu Val His Ser Asn Leu Glu Asp Asp Pro Glu Glu Ile Arg
        115   120   125
Met Glu Phe
    130

<210> 5247
<211> 1004
<212> DNA
<213> Homo sapiens

<400> 5247
nngccatgga aacgaaagcg gccaagtaga gctccgtcct gacgcgccgc ctcccgtggg
60
ctccggccgg ctaagccgcg gcggacaact atgctgaaag ccaagatcct cttcgtgggg
120
ccttgcgaga gtggaaaaac tgttttggcc aactttctga cagaatcttc tgacatcact
180
gaatacagcc caacccaagg agtgaggatc ctagaatttg agaacccgca tgttaccagc
240

4422

```
aacaacaaag gcacgggctg tgaattcgag ctatgggact gtggtggcga tgctaagttt
300
gagtcctgct ggccggccct gatgaaggat gctcatggag tggtgatcgt cttcaatgct
360
gacatcccaa gccaccggaa ggaaatggag atgtggtatt cctgctttgt ccaacagccg
420
tccttacagg acacacagtg tatgctaatt gcacaccaca aaccaggctc tggagatgat
480
aaaggaagcc tgtctttgtc gccacccttg aacaagctga agctggtgca ctcaaacctg
540
gaagatgacc ctgaggagat ccggatggaa ttcataaagt atttaaaaag cataatcaac
600
tccatgtctg agagcagaga cagggaggag atgtcaatta tgacctagcc agccttcacc
660
tgggactgcc acatccccag tgaaatcagc atgtttctcg gtgcagatct gaaatcacat
720
ccagctcctg atgttttctt ctccctctga ctgcagagga agtgttccta cctgcaggaa
780
ggcacctgtc acacagggcg ttcactcaga ccatctgtgc tctgccctga gttcagttga
840
gaaaatccta ttatcaaatt tggatttcct ggccccagaa cttcccaaag acctgtaaaa
900
tggagggatt taccacctca catatgtcca gttaaacagt ttgtggactt gtaaccgtcg
960
cagcccaatg atacaacagt agtttaatca cgtgaaaaaa aaaa
1004
```

```
<210> 5248
<211> 185
<212> PRT
<213> Homo sapiens
```

```
<400> 5248
Met Leu Lys Ala Lys Ile Leu Phe Val Gly Pro Cys Glu Ser Gly Lys
1               5                   10                  15
Thr Val Leu Ala Asn Phe Leu Thr Glu Ser Ser Asp Ile Thr Glu Tyr
            20                  25                  30
Ser Pro Thr Gln Gly Val Arg Ile Leu Glu Phe Glu Asn Pro His Val
        35                  40                  45
Thr Ser Asn Asn Lys Gly Thr Gly Cys Glu Phe Glu Leu Trp Asp Cys
    50                  55                  60
Gly Gly Asp Ala Lys Phe Glu Ser Cys Trp Pro Ala Leu Met Lys Asp
65                  70                  75                  80
Ala His Gly Val Val Ile Val Phe Asn Ala Asp Ile Pro Ser His Arg
                85                  90                  95
Lys Glu Met Glu Met Trp Tyr Ser Cys Phe Val Gln Gln Pro Ser Leu
            100                 105                 110
Gln Asp Thr Gln Cys Met Leu Ile Ala His His Lys Pro Gly Ser Gly
        115                 120                 125
Asp Asp Lys Gly Ser Leu Ser Leu Ser Pro Pro Leu Asn Lys Leu Lys
    130                 135                 140
Leu Val His Ser Asn Leu Glu Asp Asp Pro Glu Glu Ile Arg Met Glu
145                 150                 155                 160
Phe Ile Lys Tyr Leu Lys Ser Ile Ile Asn Ser Met Ser Glu Ser Arg
```

4423

```
                        165                    170                    175
Asp Arg Glu Glu Met Ser Ile Met Thr
            180                    185
```

```
<210> 5249
<211> 653
<212> DNA
<213> Homo sapiens
```

```
<400> 5249
nnacgcgtgc gcgccaccgg cccggcaggt gctgtcctta ttcccagccc agtcaagagc
60
taccggggct ggctagtcat gggggagccc agtagagagg agtataaaat ccagtccttt
120
gatgcagaga cccagcagct gctgaagaca gcactcaaag atccgggtgc tgtggacttg
180
gagaaagtgg ccaatgtgat tgtggaccat tctctgcagg actgtgtgtt cagcaaggaa
240
gcaggacgca tgtgctacgc catcattcag gcagagagta aacaagcagg ccagagtgtc
300
ttccgacgtg gactcctcaa ccggctgcag caggagtacc aggctcggga gcagctgcga
360
gcacgctccc tgcagggctg ggtctgctat gtcaccttta tctgcaacat ctttgactac
420
ctgagggtga caacatgcc catgatggcc ctggtgaacc ctgtctatga ctgcctcttc
480
cggctggccc agccagacag tttgagcaag gaggaggagg tggactgttt ggtgctgcag
540
ctgcaccggg ttggggagca gctggagaaa atgaatgggc agcgcatgga tgagctcttt
600
gtgctgatcc gggatggctt cctgctccca actggcctca gctccctggc cca
653
```

```
<210> 5250
<211> 217
<212> PRT
<213> Homo sapiens
```

```
<400> 5250
Xaa Arg Val Arg Ala Thr Gly Pro Ala Gly Ala Val Leu Ile Pro Ser
1               5                   10                  15
Pro Val Lys Ser Tyr Arg Gly Trp Leu Val Met Gly Glu Pro Ser Arg
            20                  25                  30
Glu Glu Tyr Lys Ile Gln Ser Phe Asp Ala Glu Thr Gln Gln Leu Leu
        35                  40                  45
Lys Thr Ala Leu Lys Asp Pro Gly Ala Val Asp Leu Glu Lys Val Ala
    50                  55                  60
Asn Val Ile Val Asp His Ser Leu Gln Asp Cys Val Phe Ser Lys Glu
65                  70                  75                  80
Ala Gly Arg Met Cys Tyr Ala Ile Ile Gln Ala Glu Ser Lys Gln Ala
            85                  90                  95
Gly Gln Ser Val Phe Arg Arg Gly Leu Leu Asn Arg Leu Gln Gln Glu
            100                 105                 110
Tyr Gln Ala Arg Glu Gln Leu Arg Ala Arg Ser Leu Gln Gly Trp Val
```

```
          115                   120                   125
Cys Tyr Val Thr Phe Ile Cys Asn Ile Phe Asp Tyr Leu Arg Val Asn
    130                   135                   140
Asn Met Pro Met Met Ala Leu Val Asn Pro Val Tyr Asp Cys Leu Phe
145                   150                   155                   160
Arg Leu Ala Gln Pro Asp Ser Leu Ser Lys Glu Glu Glu Val Asp Cys
                  165                   170                   175
Leu Val Leu Gln Leu His Arg Val Gly Glu Gln Leu Glu Lys Met Asn
                  180                   185                   190
Gly Gln Arg Met Asp Glu Leu Phe Val Leu Ile Arg Asp Gly Phe Leu
              195                   200                   205
Leu Pro Thr Gly Leu Ser Ser Leu Ala
    210                   215
```

```
<210> 5251
<211> 372
<212> DNA
<213> Homo sapiens

<400> 5251
atgaacaggc gtgttatatc tgctaaccca tatctagggg gcacctccaa cggctatgcc
60
cacccagcg ggacggcact tcattatgac gatgtcccgt gcatcaacgg ctcgggggaa
120
ccggaagacg gctttcctgc tttctgcagc agaagcttgg gagaagaagg ggcttttgaa
180
aacccaggcc tgtacgataa ctggccgcct ccgcacatct ttgcccgcta ctctcctgct
240
gacagaaagg cctctaggct gtctgctgac aagctgtcct ctaaccatta caaataccct
300
gcctctgctc agtctgtcac taatacctct tctgtgggga gggcgtctct cgggctcaac
360
tcgcagcctc ag
372
```

```
<210> 5252
<211> 124
<212> PRT
<213> Homo sapiens

<400> 5252
Met Asn Arg Arg Val Ile Ser Ala Asn Pro Tyr Leu Gly Gly Thr Ser
1                   5                   10                  15
Asn Gly Tyr Ala His Pro Ser Gly Thr Ala Leu His Tyr Asp Asp Val
              20                  25                  30
Pro Cys Ile Asn Gly Ser Gly Glu Pro Glu Asp Gly Phe Pro Ala Phe
          35                  40                  45
Cys Ser Arg Ser Leu Gly Glu Glu Gly Ala Phe Glu Asn Pro Gly Leu
      50                  55                  60
Tyr Asp Asn Trp Pro Pro Pro His Ile Phe Ala Arg Tyr Ser Pro Ala
65                  70                  75                  80
Asp Arg Lys Ala Ser Arg Leu Ser Ala Asp Lys Leu Ser Ser Asn His
              85                  90                  95
Tyr Lys Tyr Pro Ala Ser Ala Gln Ser Val Thr Asn Thr Ser Ser Val
```

```
              100                  105                  110
Gly Arg Ala Ser Leu Gly Leu Asn Ser Gln Pro Gln
          115                 120
```

```
<210> 5253
<211> 898
<212> DNA
<213> Homo sapiens
```

```
<400> 5253
ngaatatcca tgcagcgatc ctcaaggaca aactctgctg cttttttctct ttgtggattt
60
ccacagtgca tttccagtcc agcaaatgga aatctgggga gtctatactt tgctcacaac
120
tcatctcaat gccatccttg tggagagcca cagtgtagtg caaggttcca tccaattcac
180
tgtggacaag gtcttggagc aacatcacca ggctgccaag gctcagcaga aactacaggc
240
ctcactctca gtggctgtga actccatcat gagtattctg actggaagca ctaggagcag
300
cttccgaaag atgtgtctcc agacccttca agcagctgac acacaagagt tcaggaccaa
360
actgcacaaa gtatttcgtg agatcaccca acaccaattt cttcaccact gctcatgtga
420
ggtgaagcag cagctaaccc tagaaaaaaa ggactcagcc cagggcactg aggacgcacc
480
tgataacagc agcctggagc tcctagcaga taccagcggg caagcagaaa acaagaggct
540
caagaggggc agcccccgca tagaggagat gcgagctctg cgctctgcca gggccccgag
600
cccgtcagag gccgccccgc gccgcccgga agccaccgcg gcccccctca ctcctagagg
660
aagggagcac cgcgaggctc acggcagggc cctggcgccg ggcagggcga gcctcggaag
720
ccgcctggag gacgtgctgt ggctgcagga ggtctccaac ctgtcagagt ggctgagtcc
780
cagccctggg ccctgagccg ggtccccttc cgcaagcgcc accgatccg gaggctgcgg
840
gcagccgtta tcccgtggtt taataaagct gccgcgcgct caaaaaaaaa aaaaaaaa
898
```

```
<210> 5254
<211> 56
<212> PRT
<213> Homo sapiens
```

```
<400> 5254
Gln Gln Pro Gly Ala Pro Ser Arg Tyr Gln Arg Ala Ser Arg Lys Gln
1               5                   10                  15
Glu Ala Gln Glu Gly Gln Pro Pro His Arg Gly Asp Ala Ser Ser Ala
          20                  25                  30
Leu Cys Gln Gly Pro Glu Pro Val Arg Gly Arg Pro Ala Pro Pro Gly
          35                  40                  45
Ser His Arg Gly Pro Pro His Ser
```

50   55

<210> 5255
<211> 1410
<212> DNA
<213> Homo sapiens

<400> 5255
nncctgcctc cctcaggcac cagatccagt gtcctagtga aacgctggat cctagatccc
60
caaccccaga tccccatgcc tcgagccctg gatctccaag ctcagctgct ggattctgga
120
tgtcaacaaa cctcaccact ggatcctgac aaccacaatg cctggatcct ggggcccccca
180
tcactggatc ccagatcccc tcactccacc cactggattc ctgcattggt ttttggtttt
240
ttgttttttt ttaacctcga cactgggtct cagatccttc tgctgactgc cagatccctg
300
catttcaagc actacgcctt ccaccccag gcactggatc ccagattccc aagccttcac
360
ccaccagatt ctggctccta aaacaagtgc gggggcccca gtggcacagc aagtggatcc
420
tggcaactgc agctgctgga ttccagattc tgggtcccca atccctctgc ccagtccctc
480
aatgttgaaa cctcatctct tgaaggcaga tcctgatatt ccaaggcact gaatcccaag
540
ccctgaatcc ccggtttctg atctgaatct tccaggcgcc gggtcccaaa tgttcaggcc
600
ccaagtctag atcctggcag cccagtcaca gagtatccca cacacactgg tgcccagagc
660
cggcttctca tgacatgaaa ttgcatggtc gagggagtct gtggggaagg aagcccaggt
720
cctggctgca acctgcacgg atgctggatt cccccctcacc ccacctctgc atggccaccc
780
cctcccagcc ctgtggggaa actgttccct ggaaccactc cactccctgc atccccacac
840
ttcacagcat cttccatccc cctcccacct tctaggcgaa tagtccccag agctgtgttc
900
ctccaagggg tccgaggaat cactcactcc tggaggctgg caaggagaca gtctgaggcc
960
agggacacat gaagggatgt ccccaccccca gcactatcag ggcctcccca ggcttccaga
1020
gttgaaagcc aggagaaaat cggcaaagac caccctttcc taaacccaag cacccaatga
1080
tgcaaaaaaac aaaacaaaa aaaaccacca aatcccaaa ttcattccag atctattttt
1140
ctaccagaga gaggagcaaa gtcctcctcc cctgcgcct tacattctgc acttcatagt
1200
tggattctga gcttaggatc atctggagac cccatggagg gacttggaaa ggggaactgg
1260
gatttgggga ggggctggag gacttccgca cgcttccacc tccttcgacc tccactgcgc
1320
cccacctccc tgcctgtgtg tgttatttca aaggaaaaga acaaaaggaa taaattttct
1380

```
aagctcttta aaaaaaaaaa aaaaaaaaaa
1410


<210> 5256
<211> 95
<212> PRT
<213> Homo sapiens

<400> 5256
Met Val Glu Gly Val Cys Gly Glu Gly Ser Pro Gly Pro Gly Cys Asn
1               5                   10                  15
Leu His Gly Cys Trp Ile Pro Pro His Pro Thr Ser Ala Trp Pro Pro
            20                  25                  30
Pro Pro Ser Pro Val Gly Lys Leu Phe Pro Gly Thr Thr Pro Leu Pro
            35                  40                  45
Ala Ser Pro His Phe Thr Ala Ser Ser Ile Pro Leu Pro Pro Ser Arg
        50                  55                  60
Arg Ile Val Pro Arg Ala Val Phe Leu Gln Gly Val Arg Gly Ile Thr
65                  70                  75                  80
His Ser Trp Arg Leu Ala Arg Arg Gln Ser Glu Ala Arg Asp Thr
                85                  90                  95


<210> 5257
<211> 1366
<212> DNA
<213> Homo sapiens


<400> 5257
ncaggctctg tgttggttgg agcgagcatg tgggtctgca gtaccctgtg gcgggtgcga
60
accccgcccg gcagtggcgg gggcctgctc ccagcttctg gctgtcacgg acctgccgcc
120
tcctcctact ccgcatccgc cgagcctgcc cgggtccgcg gccttgtcta tgggcaccac
180
ggggatccag ccaaggtcgt cgaactcaag aacctggagc tagctgctgt gagaggatca
240
gatgtccgtg tgaagatgct ggcggcccct atcaatccat ctgacataaa tatgatccaa
300
ggaaactacg gactccttcc tgaactgcct gctgttggag ggaacgaagg tgttgcacag
360
gtggtagcgg tgggcagcaa tgtgaccggg ctgaagccag agactgggt gattccagca
420
aatgctggtt tagactcagg aacctggcgg accgaggctg tgttcagcga ggaagcactg
480
atccaagttc cgagtgacat ccctcttcag agcgctgcca ccctgggtgt caatccctgc
540
acagcctaca ggatgttgat ggacttcgag caactgcagc caggggattc tgtcatccag
600
aatgcatcca acagcggagt ggggcaagca gtcatccaga tcgccgcagc cctgggccta
660
agaaccatca atgtggtccg agacagacct gatatccaga agctgagtga cagactgaag
720
agtctggggg ctgagcatgt catcacagaa gaggagctaa gaaggcccga aatgaaaaac
780
```

```
ttctttaagg acatgcccca gccacggctt gctctcaact gtgttggtgg gaaaagctcc
840
acagagctgc tgcggcagtt agcgcgtgga ggaaccatgg taacctatgg ggggatggcc
900
aagcagcccg tcgtagcctc tgtgagcctg ctcattttta aggatctcaa acttcgaggc
960
ttttggttgt cccagtggaa gaaggatcac agtccagacc agttcaagga gctgatcctc
1020
acactgtgcg atctcatccg ccgaggccag ctcacagccc ctgcctgctc ccaggtcccg
1080
ctgcaggact accagtctgc cttggaagcc tccatgaagc ccttcatatc ttcaaagcag
1140
attctcacca tgtgatcatc ccaaaagagc tggagtgaca tgggagggga ggcggatctg
1200
aggggctggg tgcaggcccc tcagttgggg ctcccacctt ccccagacta ctgttctcct
1260
cactgcctct tcctattagg aggatggtga agccagccac ggttttcccc agggccagcc
1320
ttaaggtatc taataaagtc tgaactctcc cttccaaaaa aaaaaa
1366


<210> 5258
<211> 375
<212> PRT
<213> Homo sapiens

<400> 5258
Met Trp Val Cys Ser Thr Leu Trp Arg Val Arg Thr Pro Pro Gly Ser
1               5                   10                  15
Gly Gly Gly Leu Leu Pro Ala Ser Gly Cys His Gly Pro Ala Ala Ser
                20                  25                  30
Ser Tyr Ser Ala Ser Ala Glu Pro Ala Arg Val Arg Gly Leu Val Tyr
            35                  40                  45
Gly His His Gly Asp Pro Ala Lys Val Val Glu Leu Lys Asn Leu Glu
        50                  55                  60
Leu Ala Ala Val Arg Gly Ser Asp Val Arg Val Lys Met Leu Ala Ala
65                  70                  75                  80
Pro Ile Asn Pro Ser Asp Ile Asn Met Ile Gln Gly Asn Tyr Gly Leu
                85                  90                  95
Leu Pro Glu Leu Pro Ala Val Gly Gly Asn Glu Gly Val Ala Gln Val
            100                 105                 110
Val Ala Val Gly Ser Asn Val Thr Gly Leu Lys Pro Gly Asp Trp Val
        115                 120                 125
Ile Pro Ala Asn Ala Gly Leu Asp Ser Gly Thr Trp Arg Thr Glu Ala
        130                 135                 140
Val Phe Ser Glu Glu Ala Leu Ile Gln Val Pro Ser Asp Ile Pro Leu
145                 150                 155                 160
Gln Ser Ala Ala Thr Leu Gly Val Asn Pro Cys Thr Ala Tyr Arg Met
                165                 170                 175
Leu Met Asp Phe Glu Gln Leu Gln Pro Gly Asp Ser Val Ile Gln Asn
                180                 185                 190
Ala Ser Asn Ser Gly Val Gly Gln Ala Val Ile Gln Ile Ala Ala Ala
            195                 200                 205
Leu Gly Leu Arg Thr Ile Asn Val Val Arg Asp Arg Pro Asp Ile Gln
```

```
        210                    215                    220
Lys Leu Ser Asp Arg Leu Lys Ser Leu Gly Ala Glu His Val Ile Thr
225                    230                    235                    240
Glu Glu Glu Leu Arg Arg Pro Glu Met Lys Asn Phe Phe Lys Asp Met
                   245                    250                    255
Pro Gln Pro Arg Leu Ala Leu Asn Cys Val Gly Gly Lys Ser Ser Thr
                   260                    265                    270
Glu Leu Leu Arg Gln Leu Ala Arg Gly Gly Thr Met Val Thr Tyr Gly
             275                    280                    285
Gly Met Ala Lys Gln Pro Val Val Ala Ser Val Ser Leu Leu Ile Phe
             290                    295                    300
Lys Asp Leu Lys Leu Arg Gly Phe Trp Leu Ser Gln Trp Lys Lys Asp
305                    310                    315                    320
His Ser Pro Asp Gln Phe Lys Glu Leu Ile Leu Thr Leu Cys Asp Leu
                   325                    330                    335
Ile Arg Arg Gly Gln Leu Thr Ala Pro Ala Cys Ser Gln Val Pro Leu
             340                    345                    350
Gln Asp Tyr Gln Ser Ala Leu Glu Ala Ser Met Lys Pro Phe Ile Ser
             355                    360                    365
Ser Lys Gln Ile Leu Thr Met
      370                    375
```

```
<210> 5259
<211> 306
<212> DNA
<213> Homo sapiens

<400> 5259
ctgaattgct gtgagggcag aacacccaag gagacaatag aaaatttgtt gcacagaatg
60
actgaagaga agacgctgac tgctgagggt ttggtaaaac tcctccaggc tgtgaagacg
120
actttcccaa acctgggcct tctgctagag aagttgcaga aatcagccac tttgccaagc
180
accacagtcc aaccaagccc tgatgattat gggactgagc tattgagacg ctatcatgaa
240
aacctctctg agattttcac agacaaccag attttattaa agatgatctc acacatgaca
300
agttta
306
```

```
<210> 5260
<211> 83
<212> PRT
<213> Homo sapiens

<400> 5260
```

```
Met Thr Glu Glu Lys Thr Leu Thr Ala Glu Gly Leu Val Lys Leu Leu
  1               5                  10                  15
Gln Ala Val Lys Thr Thr Phe Pro Asn Leu Gly Leu Leu Leu Glu Lys
             20                  25                  30
Leu Gln Lys Ser Ala Thr Leu Pro Ser Thr Thr Val Gln Pro Ser Pro
        35                  40                  45
Asp Asp Tyr Gly Thr Glu Leu Leu Arg Arg Tyr His Glu Asn Leu Ser
```

```
      50                    55                    60
Glu Ile Phe Thr Asp Asn Gln Ile Leu Leu Lys Met Ile Ser His Met
65                    70                    75                    80
Thr Ser Leu


<210> 5261
<211> 2394
<212> DNA
<213> Homo sapiens

<400> 5261
ncggccgcca tggcgacccc ggccaggccc ggcgaggccg aggacgcggc cgagcggccc
60
ctccaggatg agccggcggc ggcggcggca ggcccgggca agggtcgctt cctcgtccgc
120
atctgtttcc agggagacga gggcgcctgc ccgacccggg acttcgtggt aggagcgctt
180
atcctgcgct ccatcggcat ggacccgagc gacatctacg cggtcatcca gatcccgggc
240
agccgcgaat tcgacgtgag cttccgctca gcggagaagc tggccctgtt cctacgcgtc
300
tacgaggaga agcgggagca ggaggactgc tgggagaact ttgtggtgct ggggcggagc
360
aagtccagct tgaagacgct cttcatcctc ttccggaacg agacggtgga cgtggaggac
420
attgtgactt ggctcaagcg ccactgcgac gtgctggccg tgccggtgaa agtgaccgac
480
aggtttggga tctggaccgg ggagtacaaa tgcgagatcg agctgcgcca gggggagggc
540
ggggtcaggc acttgccagg ggccttcttc ctgggggccg agaggggcta cagctggtac
600
aaggggcagc ccaagacatg ctttaaatgt ggttcccgga cccacatgag cggcagctgc
660
acgcaggaca ggtgcttcag gtgcggggag gagggcacc tgagcccta ctgccggaag
720
ggcatcgtgt gcaacctctg tggcaagcga ggacacgcct ttgcccagtg tcccaaagca
780
gtgcacaatt ccgtggcagc tcagctaacc ggcgtggccg ggcactaaac acccgcctgc
840
ctgccagggt gaacacacag ccagcttatc cctcttaagt gccaaaactt ttttttaaac
900
cattttttat cgtttttgaa ggagatcttt ttaaaaccta caagagacat ctctctatgc
960
cttcttaaac cgagtttact ccatttcagc ctgttctgaa ttggtgactc tgtcaccaat
1020
aacgactgcg gagaactgta gcgtgcagat gtgttgcccc tcccttttaa aattttattt
1080
tcgttttttct attgggtatt tgttttgttt cttgtacttt ttctctctct ccttgccccc
1140
ctcccgccct ccccgcccca tacctttttct tccctggat tttcacccctt tgggctgcct
1200
tgctcatctt tatgccccag cactaggtac ggggcccaac acgtggtagg cactccatca
1260
```

gtgtttgctg aattgaaaac attgttgact gtggcttcta tcagagtgtc tacctttgc
1320
agctcttccc ctccctcatt taatttgctg cttttaatct acgtggtctg agaatttgtg
1380
aaaccagtgt tgttagaagt gtatataatc tgaatcaata agctctgaat ggtggccaag
1440
ggcctctctt atggcacaaa gatgcatgga cttcatgaca gctcttttgg tggctcagaa
1500
gccatttttt atagaatcat ggaatctaga atattcctgc tggaaagaac ctgagagttg
1560
gtttggacca attccctggt tttccagcag atgaaacagg cccaaagagg ttaaatgact
1620
gggtgaaaat cacatagctg tctggtgcca gagccagcct atagtagagt cccctgaccc
1680
caagcccggt gctcattcca ctacctctca cacttcacaa caatttcctc aacacttgag
1740
ggcccagaaa gtctgatctc tccagaatga tcagcccaga ggaatgctga gaaatcacct
1800
ggaggaggga gcagaaagag aaggttttta aggaggggct tctgaatact tgggagatac
1860
ggaacggacc aaggaccaca ctccagggtg cattcgttgc tccctggggc accacttctg
1920
gattacagtg tgccaggtcc tttggaggcc ctaccccttc cccattcatt gccaccagtg
1980
agaaatgggg gtgcccctgt gtaaagaaac ctaccaaagg tttacatttg caccttagcc
2040
tcaatagcta cgaaccctag agaagcagct agctggagct catgtgcaac tcctgattct
2100
caggagaaag atggatttta acccaaaatt atgagtgagc tgttaactct aaaatgtact
2160
tgggagatag gccaagcgag aggtcatggg ccaactaagt gttatccagt agaaaagaca
2220
gtacactgct tttcttttag tgtttgcttt tcctttgcta tatgttttgc tatttccttg
2280
tggcttagaa tgtaaaattg attgttaaaa gttttgttct gaataaatat ttatcttttg
2340
tattgccaaa aaacacttga gggcccagaa agtctgatct ctccagaatg atca
2394

<210> 5262
<211> 275
<212> PRT
<213> Homo sapiens

<400> 5262
Xaa Ala Ala Met Ala Thr Pro Ala Arg Pro Gly Glu Ala Glu Asp Ala
1   5   10   15
Ala Glu Arg Pro Leu Gln Asp Glu Pro Ala Ala Ala Ala Gly Pro
            20   25   30
Gly Lys Gly Arg Phe Leu Val Arg Ile Cys Phe Gln Gly Asp Glu Gly
        35   40   45
Ala Cys Pro Thr Arg Asp Phe Val Val Gly Ala Leu Ile Leu Arg Ser
    50   55   60

```
Ile Gly Met Asp Pro Ser Asp Ile Tyr Ala Val Ile Gln Ile Pro Gly
70              75                  80
Ser Arg Glu Phe Asp Val Ser Phe Arg Ser Ala Glu Lys Leu Ala Leu
                85                  90                  95
Phe Leu Arg Val Tyr Glu Glu Lys Arg Glu Gln Glu Asp Cys Trp Glu
            100                 105                 110
Asn Phe Val Val Leu Gly Arg Ser Lys Ser Ser Leu Lys Thr Leu Phe
            115                 120                 125
Ile Leu Phe Arg Asn Glu Thr Val Asp Val Glu Asp Ile Val Thr Trp
        130                 135                 140
Leu Lys Arg His Cys Asp Val Leu Ala Val Pro Val Lys Val Thr Asp
145                 150                 155                 160
Arg Phe Gly Ile Trp Thr Gly Glu Tyr Lys Cys Glu Ile Glu Leu Arg
                165                 170                 175
Gln Gly Glu Gly Gly Val Arg His Leu Pro Gly Ala Phe Phe Leu Gly
            180                 185                 190
Ala Glu Arg Gly Tyr Ser Trp Tyr Lys Gly Gln Pro Lys Thr Cys Phe
            195                 200                 205
Lys Cys Gly Ser Arg Thr His Met Ser Gly Ser Cys Thr Gln Asp Arg
        210                 215                 220
Cys Phe Arg Cys Gly Glu Glu Gly His Leu Ser Pro Tyr Cys Arg Lys
225                 230                 235                 240
Gly Ile Val Cys Asn Leu Cys Gly Lys Arg Gly His Ala Phe Ala Gln
                245                 250                 255
Cys Pro Lys Ala Val His Asn Ser Val Ala Ala Gln Leu Thr Gly Val
            260                 265                 270
Ala Gly His
        275
```

```
<210> 5263
<211> 319
<212> DNA
<213> Homo sapiens

<400> 5263
tctagaacaa atgagaacca gtatcagaag gtgacacagg agagtttgtg acagtgccga
60
tttcagctga cgaattacca gaagatccag cattgctgtc gtttccatca aaagtagctg
120
gaagtagata cacattattt tctgacaggg gggaagtatc agaagaaagc atgttggttg
180
tgccttggaa aatctttttt ggttgatatt gaaatgccat ttcaccagtt tcaagccttc
240
ttcccaagag tgacttatct gtatcttact ttgtagcttc cattcagaca ttgttgctct
300
atttattaaa tccatggct
319
```

```
<210> 5264
<211> 105
<212> PRT
<213> Homo sapiens

<400> 5264
```

```
Met Asp Leu Ile Asn Arg Ala Thr Met Ser Glu Trp Lys Leu Gln Ser
 1               5                   10                  15
Lys Ile Gln Ile Ser His Ser Trp Glu Glu Gly Leu Lys Leu Val Lys
                20              25                  30
Trp His Phe Asn Ile Asn Gln Lys Arg Phe Ser Lys Ala Gln Pro Thr
            35                  40                  45
Cys Phe Leu Leu Ile Leu Pro Pro Cys Gln Lys Ile Met Cys Ile Tyr
        50                  55                  60
Phe Gln Leu Leu Leu Met Glu Thr Thr Ala Met Leu Asp Leu Leu Val
65                  70                  75                  80
Ile Arg Gln Leu Lys Ser Ala Leu Ser Gln Thr Leu Leu Cys His Leu
                85                  90                  95
Leu Ile Leu Val Leu Ile Cys Ser Arg
            100             105
```

```
<210> 5265
<211> 3203
<212> DNA
<213> Homo sapiens

<400> 5265
cgcccgggca ggtcggagac ggaggaaagg tggcagccag attacttaga gaggcacaga
60
ggagagagat cggggtgagt cgccatgggg actcccaggg cccagcaccc gccgcctccc
120
cagctgctgt tcctaattct gctgagctgt ccctggatcc agggtctgcc cctgaaggag
180
gaggagatat tgccagagcc tggaagtgag accccacggg tggcctctga ggccctggct
240
gaactgcttc atggggccct gctgaggagg ggcccagaga tgggctacct gccagggcct
300
ccccttgggc ctgagggagg agaggaggag acgacgacca ccatcatcac cacgacaact
360
gttaccacta cggtgaccag cccagttctg tgtaataaca acatctccga gggcgaaggg
420
tatgtggagt ctccagatct ggggagcccc gtcagccgca ccctggggct cctggactgc
480
acttacagca tccatgtcta ccctggctac ggcattgaga tccaggtgca gacgctgaac
540
ctgtcacagg aagaggagct cctggtgctg gctggtgggg gatccccagg cctggccccc
600
cgactcctgg ccaactcatc catgcttgga gaaggacaag tccttcggag cccaaccaac
660
cggctgcttc tgcacttcca gagcccacgg gtcccaaggg gcggtggctt caggatccac
720
tatcaggcct acctcctgag ctgtggcttc cctccccggc cggcccatgg ggacgtgagt
780
gtgacggacc tgcaccctgg gggcactgcc acctttcact gtgattcggg ctaccagctg
840
cagggagagg agaccctcat ctgcctcaat ggcacccggc catcctggaa cggtgaaacc
900
cccagctgca tggcatcctg tggtggcacc atccacaatg ccaccctggg ccgcatcgtg
960
```

```
tccccagagc ctgggggagc cgtagggccc aacctcacct gccgttgggt cattgaagca
1020
gctgaggggc gccggctgca cctgcacttt gaaagggtct cgctggatga ggacaatgac
1080
cggctgatgg tgcgctcagg gggcagcccc ctatcccccg tgatctatga ttcggacatg
1140
gacgatgtcc ccgagcgggg tctcatcagt gacgcccagt ccctctacgt ggagctgctg
1200
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